CIC Pro™ Clinical Information Center Bedrock Hardware Platform

Service Manual

2001099-156 Revision C

GE Medical Systems
Information Technologies

gemedicalsystem.com

NOTE: Due to continuing product innovation, specifications in this manual are subject to change without notice.

NOTE: This manual supports CIC Pro information centers with the product code **JA1**. The CIC Pro information centers with the **JA1** product code use the Bedrock hardware platform and are only compatible with software versions 4.1 and later.

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1 Introduction

For your notes

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If any provision of this Agreement is held invalid or unenforceable, the remaining portions of the Agreement shall continue in full force and effect.

Manual Information

Revision History

The document part number and revision letter are listed at the bottom of each page in this manual. The revision letter identifies the document's update level. The revision history of this document is summarized below.

Revision History	
Revision	**Comment**
A	Initial Release
B	Various edits supporting additional features/feedback/clarifications obtained after previous release.
C	Enhancements to the Write Filter procedure.

Conventions

Bold text	Indicates keys on the keyboard, text to be entered, or hardware items such as buttons or switches on the equipment.
Italicized text	Indicates software terms that identify menu items, buttons, or options in various windows.
Ctrl+Esc	Indicates a keyboard operation. A plus (+) sign between the names of two keys indicates that you must press and hold the first key while pressing the second key once. For example, "Press **Ctrl+Esc**" means to press and hold down the **Ctrl** key while pressing the **Esc** key.
<**Space**>	Indicates you must press the spacebar. When instructions are given for typing a precise text string with one or more spaces, the point where the spacebar must be pressed is indicated as <**Space**>.
Enter	Indicates you must press the **Enter** or **Return** key on the keyboard. Do not type "enter".

Manual Purpose

This manual contains technical information supporting equipment maintenance and repair, considered field repeatable down to the assembly level.

Where necessary, this manual identifies additional sources of relevant information and technical assistance.

See the operator's manual for instructions necessary for safe equipment operation, in accordance with proper function and intended use.

Intended Audience

This manual is intended for use by service representatives and technical personnel who maintain, troubleshoot, or repair the equipment.

Safety Information

General

Responsibility of the Manufacturer

GE Medical Systems *Information Technologies* is responsible for the effects of safety, reliability, and performance only if:

- assembly operations, extensions, readjustments, modifications, or repairs are carried out by persons authorized by GE Medical Systems *Information Technologies*;
- the electrical installation of the relevant room complies with the requirements of the appropriate regulations; and
- the device is used in accordance with the instructions for use.

Intended Use

- These devices are intended for use under the direct supervision of a licensed health care practitioner.
- These devices are not intended for home use.
- Federal law restricts these devices to be sold by or on the order of a physician.
- Contact GE Medical Systems *Information Technologies* for information before connecting any devices to the equipment that are not recommended in this manual.
- Parts and accessories used must meet the requirements of the applicable UL/IEC/UL 60601 series safety standards.
- Parts and accessories used must meet all local building and safety requirements.
- Periodically, and whenever the integrity of the device is in doubt, test all functions.
- The use of ACCESSORY equipment not complying with the equivalent safety requirements of the device may lead to a reduced level of safety of the resulting system. Consideration relating to the choice shall include:
  - use of the accessory in the PATIENT VICINITY; and
  - evidence that the safety certification of the ACCESSORY has been performed in accordance to the appropriate UL/IEC/UL 60601 national standards.
- If the installation of the equipment, in the USA, will use 240V rather than 120V, the source must be a center-tapped, 240V, single-phase circuit.

Hazard Definitions

NOTE
A **NOTE** provides application tips or other useful information.

Warnings and Cautions are used throughout this manual and designate a degree or level of hazardous situations. A hazard is defined as a source of potential injury to a person.

WARNING
A WARNING indicates a potential hazard or unsafe practice which, if not avoided, could result in death or serious injury.

CAUTION
A CAUTION indicates a potential hazard or unsafe practice which, if not avoided, could result in minor personal injury or product/property damage.

CIC Pro Specific Hazards

WARNINGS
LOSS OF MONITORING — If monitoring at the CIC Pro is temporarily interrupted, alternate monitoring devices or close observation should be used until the monitoring function at the CIC Pro is restored.

"Loss of monitoring function" indicators:

- RED SCREEN (RED/GRAY screen for second monitor in dual-display configured systems) indicates the CIC Pro application is restarting itself and patient monitoring at the CIC Pro is NOT occurring. The monitoring function at the CIC Pro will automatically resume. No user action is required.
- BLUE SCREEN indicates the Windows operating system has a functional error and patient monitoring at the CIC Pro is NOT occurring. If the CIC Pro does not automatically restart after 60 seconds, the monitoring function at the CIC Pro will not resume until you turn off the power to the CIC Pro and then turn the power back on. The monitoring function should resume in approximately 3 to 4 minutes.

Once the monitoring function at the CIC Pro has been restored, verify the correct monitoring state and alarm function.

WARNINGS

CIC Pro V4.1.x IS in-unit compatible with CIC Pro V4.0.x, but IS NOT with versions of CIC Pro V3.1 or earlier. Sharing of the same care unit name across CIC Pros having incompatible software versions can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms.

Both hardwire and telemetry beds are limited in the number of remote view connections that can be supported.

Do not exceed a maximum of 15 CIC Pros in a single logical care unit.

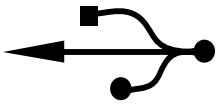
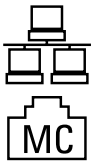
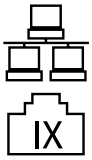
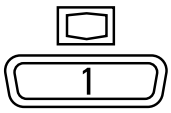
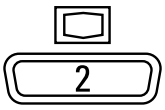
Attempting simultaneous displays of a patient monitor (bedside or telemetry) at too many CIC Pros may cause lost or intermittent communication between CIC Pros and the patient monitor. This is evidenced by NO COMM or intermittent communication conditions for the beds.

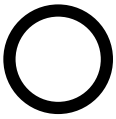
The maximum CIC Pros viewing a patient monitor can vary depending on patient monitor capabilities and network design.

Do not load any software other than that specified by GE Medical Systems *Information Technologies* onto the CIC Pro. Installation of software not specified by GE Medical Systems *Information Technologies* may cause damage to the CIC Pro or loss or corruption of data.

Equipment Symbols

The following symbols appear on the CIC Pro.

	ATTENTION: Consult accompanying documents before using the equipment.
	Provide electrostatic discharge damage Protection.
	USB PORT ICON: USB port. Used primarily for mouse and keyboard connections
	UNITY NETWORK MC NETWORK CONNECTION ICON: Ethernet port used for the Unity Network MC network connection.
	UNITY NETWORK IX NETWORK CONNECTION ICON: Ethernet port used for the Unity Network IX network connection.
	SPEAKER OUT ICON: Speaker/audio port.
	VIDEO 1 ICON: Primary video port.
	VIDEO 2 ICON: Secondary video port.
	COM 1 ICON: Primary communication port.
	COM 2 ICON: Secondary communication port.
	Power On: Indicates power switch ON position.

	Power Off: Indicates power switch OFF position.
	Chassis ground connection.

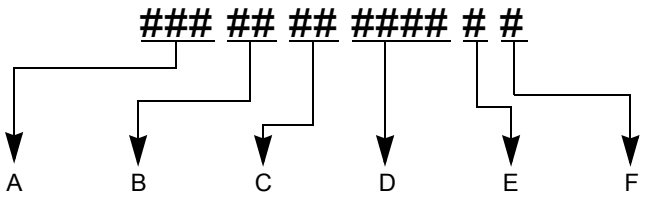
Service Requirements

Follow the service requirements listed below, and in the "Maintenance" chapter of this manual, starting on page 4-1.

- Refer equipment servicing to GE Medical Systems Information Technologies' authorized service personnel only.
- Any unauthorized attempt to repair equipment under warranty voids that warranty.
- It is the user's responsibility to report the need for service to GE Medical Systems Information Technologies or to one of their authorized agents.
- Failure on the part of the responsible individual, hospital, or institution using this equipment to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazards.
- Regular maintenance, irrespective of usage, is essential to ensure that the equipment is always functional when required.

Equipment Identification

Every GE Medical Systems *Information Technologies* device has a unique serial number for identification. A sample of the information found on a serial number label is shown below.



	Description
A	product code[1]
B	year manufactured
C	fiscal week manufactured
D	production sequence number
E	manufacturing site
F	miscellaneous characteristic

1. The product code for the CIC Pro is **JA1**

2 Equipment Overview

For your notes

CIC Pro Description

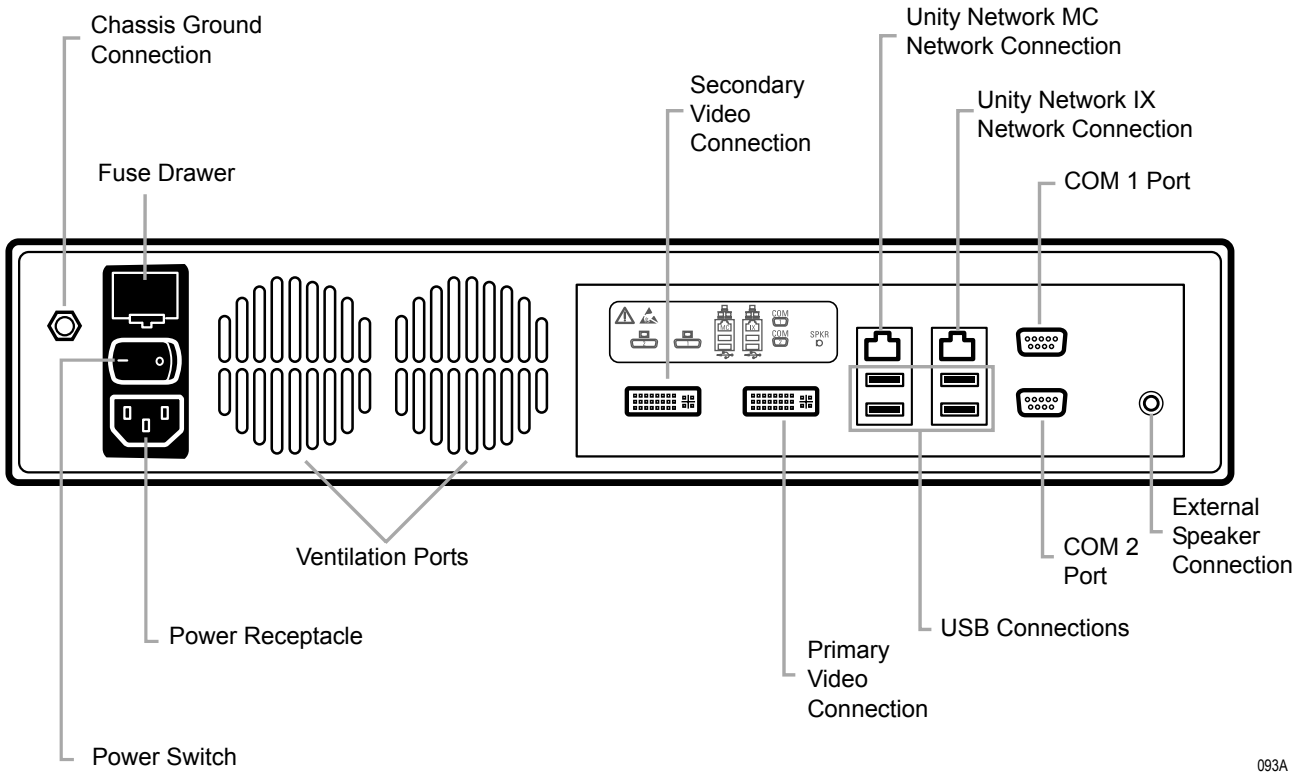
Basic Components

The CIC Pro supports a choice from 18-inch, 20-inch, or 21-inch color displays. Touchscreen display is also supported. See "FRU Installation/Field Replacement Procedures" on page 6-4.

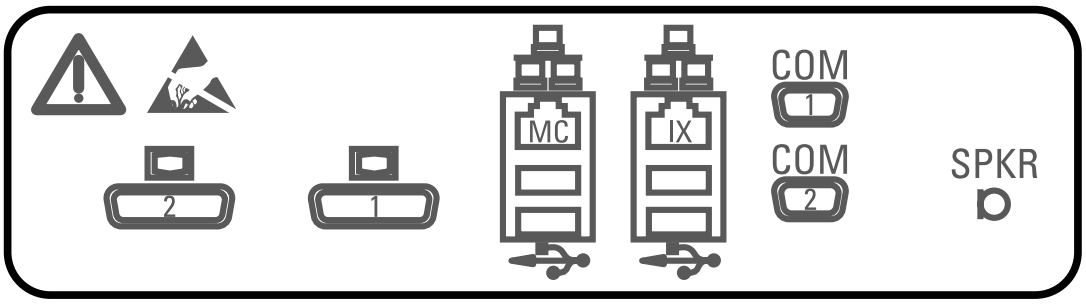
Specifications

See Appendix A, "Technical Specifications" .

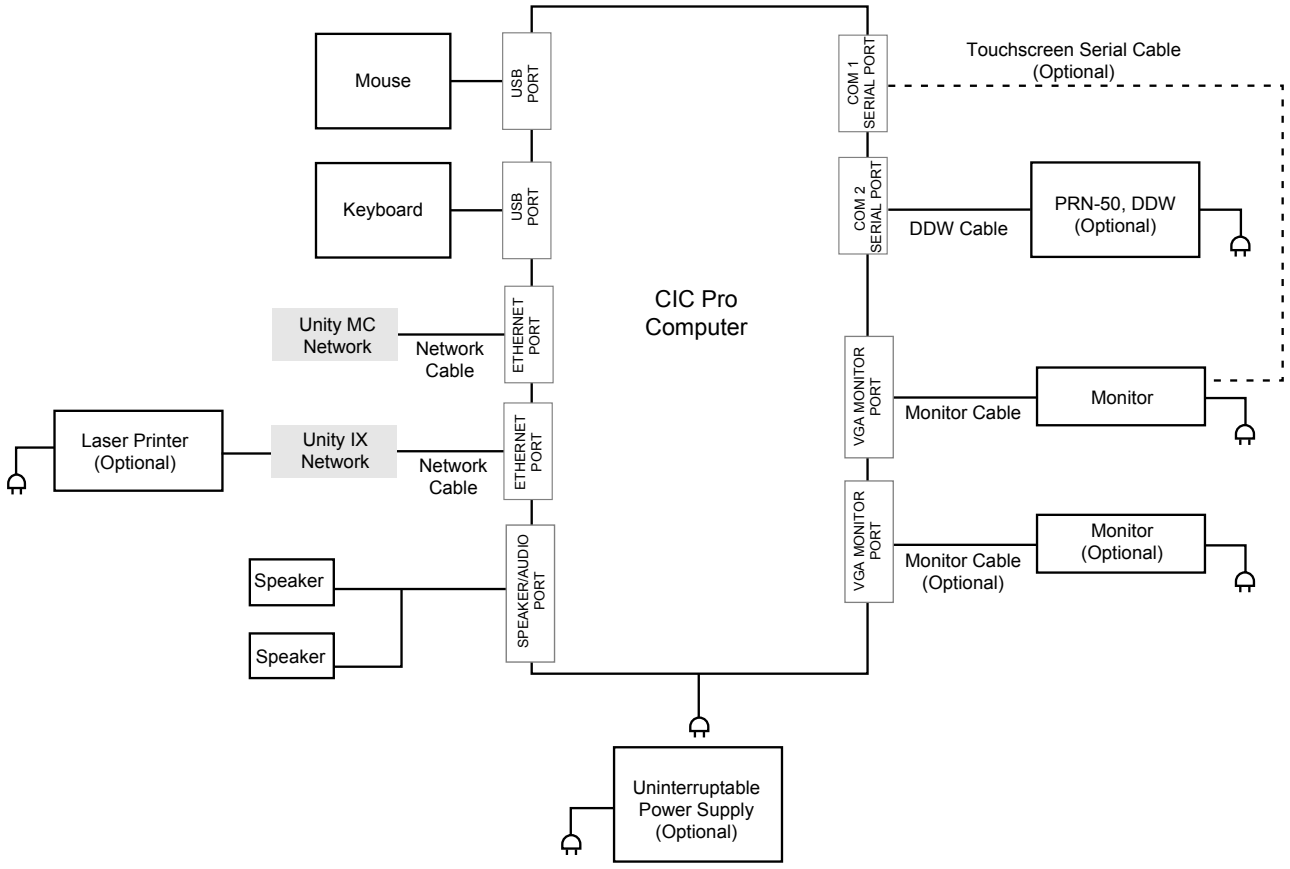
Back Panel/Connections



Back Panel/Label



CIC Pro System Block Diagram



Unity Network Description/Connection

Unity Network MC Network

Unity Network MC (Mission Critical) network functions:

- Connects CIC Pro systems to other GE patient monitoring devices
- Connects CIC Pro systems to telemetry systems
- The Unity Network MC passes the following data:
  - Waveforms
  - Parameters
  - Alarms
  - Other time-sensitive information

Unity Network IX Network

The **Unity Network IX** (Information eXchange) network functions:

- Network laser printing
- Connects CIC Pros together within a care unit for license sharing.
- Full Disclosure
- Remote Serviceability

NOTE

This network is used if a connection to outside your facility is required (a browser internet connection, for example).

Network Connections

Connections to the Unity Network MC and IX networks are via Ethernet. For connector locations see “Back Panel/Connections” on page 2-3.

Theory of Operation

CIC Pro Functional Description

The CIC Pro application is designed to provide real-time patient data and alarms for central nurses' stations in hospitals. It can display real-time waveforms and vital sign data, with visual and audible alarms, for up to 16 patients simultaneously. CIC Pro supports both hardwired and telemetry data.

CIC Pro software allows users to select any bed on the Unity Network MC network and display an expanded view of that bed's real-time parameters and waveforms. This expanded view also allows users to view and modify settings within the care unit, and view other patient data (including alarm histories, graphic trends and tabular trends).

The user can configure the number of patients displayed by the system, and the number of displayed waveforms per patient. Waveform colors are configurable.

All configuration data is stored, and is restored after a system power cycle or software restart.

The CIC Pro is connected to the Unity Network MC network via Ethernet.

How Trends are Calculated

CIC Pros trend two types of physiological data: periodic and episodic.

Periodic Data

Periodic data is constantly updated. Data is sampled every two seconds to yield 30 samples per minute. The displayed value is the median of the 30 samples. It is always the median of a one-minute time frame, regardless of the interval selected.

The interval is the time BETWEEN values, not the time of the value itself. For example, a five minute interval means one minute samples spaced five minutes apart, NOT five minute samples, and NOT a median of the five one minute samples. Odd number values are rounded down to the nearest even number.

If the calibration of the system clock changes (for example, daylight savings time), the "time" for periodic data "slides" into the revised time. However, episodic data is time-stamped and retains its original time.

Examples of periodic data include heart rate (HR) and blood pressure (BP).

Episodic Data

Episodic data are events that are user, or system, generated. Examples of episodic data include temperature (Temp) and non-invasive blood pressure (NiBP).

File/Data Handling

Log Files

Log files generated by the CIC Pro application, other associated applications and the CIC Pro operating system are used during system analysis, problem diagnosis and troubleshooting. See "Event Logs" on page 5-17 for more information about log files.

RWHAT Packets

All monitoring devices on the GE Unity Network periodically broadcast information about themselves in "RWHAT" packets. Among other things, RWHAT packets contain IP address, port number, name, and offered services information about each device.

All monitoring devices listen for RWHAT packets, and maintain a database of information about other devices on the network. When devices need to communicate, the appropriate IP address information is obtained from the database, Unity Network-protocol messages are created, and operating system services are used to transmit the message on the network.

For example, when a CIC Pro computer communicates with a telemetry device, the telemetry device's IP address is retrieved from the CIC Pro computer RWHAT database, the Unity Network messages are created, and the CIC Pro Windows operating system sends the messages to the telemetry device.

Storage

- The FD Data interface uses the Unity Network IX network to retrieve data from the database.
- Each bed is stored in a separate directory, containing one index file and many record files.

Printing

- The *Report* printout is a configurable, long-time-period overview of waveform activity. It is activated by pressing the *Report Print* button on the FD display.
- The *Strip* printout is a quick snapshot of what is currently on the screen. It is activated by pressing the *Print* button while the FD tab page is being viewed.
- There is a separate FD printer selection from the main laser printer selection on the setup page. Specifying a printer here does not advertise this CIC Pro as a print server on RWHAT (like the main laser selection). It is used exclusively by the local FD system. A printer must be "Added" to the operating system before it will show up in the drop-down list.

Full Disclosure

The CIC Pro Full Disclosure (FD) system stores all waveform and parametric data from a patient for up to 76 hours. This data can be randomly accessed later in a static display that looks similar to the real-time display window. To accomplish this, every Unity Network waveform packet (4/sec) and every parameter packet (1 every 2 seconds) is stored on the CIC Pro. In addition, one RWHAT packet and one admit packet is stored every minute to help recreate the patient's history.

Unlike an alarm history event stored at the bedside, which only stores a 10 second snap shot surrounding the event, Full Disclosure allows the user to scroll back in time (prior to the event and leading up to the event).

Behaviors/Rules

Installation

- Incompatible with old FD system (prior to CIC Pro v3.x).
- Certain Unit Defaults are incompatible with CIC Pro v2.x systems.

Start-up modes

- **Auto For All –** Automatically detects admitted beds that are not currently being FD'd anywhere and attempts to start FD on one of the CIC Pros within the unit. This works regardless of whether the bed was admitted directly at the bedside or the CIC Pro. FD cannot be stopped on a particular bed until the bed is discharged.
- **Auto If Listed –** Same as *Auto For All*, but only if the bed in question is entered into the list on the FD Unit Defaults setup screen. All other beds are not Full Disclosed.
- **Manual Mode –** Beds are NOT automatically full disclosed upon admission. User can manually start and stop FD for a particular bed by using a button located on the Full Disclosure tab sheet. All FD data is deleted when Full Disclosure is stopped for a bed. See the CIC Pro operator's manual for more information.

Licensing

- Support for up to 16 patients per CIC Pro
- Stores 76 hours of data per patient regardless of license type. Licensing controls amount of data that is viewable.
- Unit Licensing Mode sets which type of license is requested. Supported types: None (1 hour), 24, 48, 72 hours.
- Failure to obtain a license results in no FD (0 hours).

- Once a license is successfully obtained, if the license server is removed, FD access is restricted to 1 hour, until the server is returned.
- Licensing information is stored with data, so restrictions follow data regardless of where it is viewed, even if viewed in a different unit with a different Unit License Mode.

Refer to the GE “Unity Network® Information Suite (IS) Server License Configuration Guide” for more complete licensing information.

Control

CIC Pro Master and Full Disclosure

NOTE

There is only one “master” CIC Pro per care unit (with respect to FD). The CIC Pro with the lowest IP address becomes the master.

CIC Pro master wakes up every minute to perform the following activities:

- Detects admitted (but not FD’d) beds within the care unit, for Auto modes.
- Assigns beds (to be FD’d) to CIC Pros within the care unit.
- Applies Multi-FD and Twin-Bed Rules.
- Uses the FDSvr process to find the "FULL DISCLO" service, identifying CIC Pros with FD ability. The "FULL DISCLO" service is used by the CIC Pro master while searching for other CIC Pros to query, control & assign beds.

  NOTE

  The CIC Pro master checks the versions of the other CIC Pros before trying to identify CIC Pros with FD ability. Versions earlier than 2.5 are ignored.

- Uses the LocateFD service (provided by FDSvr) to guarantee that the right CIC Pro is contacted if retrieving data while a multi-FD condition is occurring.

NOTE

A CIC Pro will NOT act as master during first minute after it starts up. Instead, the latest data is first collected from the other CIC Pros on the network, and this data determines which CIC Pro becomes master. Multiple masters on a network might occur, but only briefly (this will self-correct within a couple of minutes).

Minute Rule/Offline Storage Setting

(see “Offline Storage” on page 3-49):

The Offline Storage Setting determines the length of time the CIC Pro will maintain FD data for a bed from which it has stopped receiving data (a NO COMM condition).

- If the NO COMM condition ends WITHIN the Offline Storage setting time frame, FD for the bed continues.

- If a NO COMM condition exceeds the Offline Storage Setting time frame, all data for the bed is deleted. If (while in Auto mode) the bed comes back online (the NO COMM condition ends) after this point, the bed is reassigned as a new and different bed.
- When FD starts up on a CIC Pro, it determines when data was last received from the assigned beds.

  If the latest data for a bed:

  - IS NOT older than the Offline Storage Setting, then FD data collection continues for the bed.
  - IS older than the Offline Storage Setting, existing data associated with the bed is deleted, and NEW data collection is started for the bed.

Multi-FD Rule

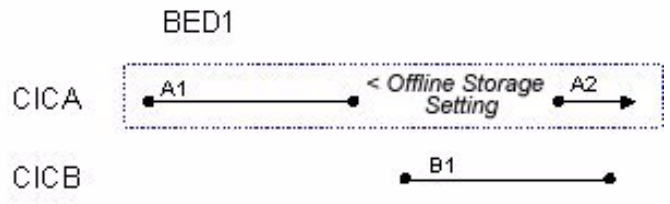
If multiple CIC Pros are running in a unit, the Multi-FD Rule allows switching of FD data collection from one CIC Pro to another, if a CIC Pro goes offline (reboot, shutdown, etc.).

The following examples describe how the Multi-FD Rule works when using 2 CIC Pros (CICA and CICB).

NOTE

In the examples, start up mode is "Auto", and only one bed (BED1) is used.

Example 1:



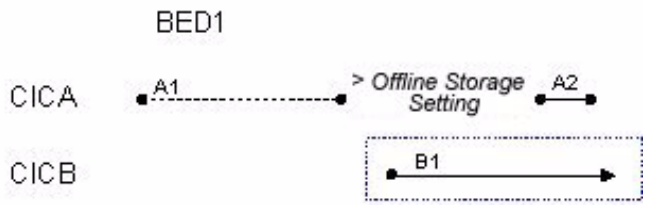
1. CICA goes offline and stops FD'ing BED1. This causes CICB to begin FD'ing BED1.

   NOTE

   The master CIC Pro detects CICA going offline, and switches FD over to CICB, within a minute of the offline event occurring.

2. CICA comes back online within the Offline Storage Setting time frame, and continues FD'ing BED1 again. At this point, CICA and CICB are BOTH FD'ing BED1.
3. The Multi-FD Rule does not allow more than one CIC Pro to FD the same bed at the same time--only the data that goes the farthest back in time (CICA) is kept. Because of this, CICA continues FD'ing BED1, and CICB stops.

Example 2:



1. CICA goes offline and stops FD'ing BED1. This causes CICB to begin FD'ing BED1.

   NOTE

   The master CIC Pro detects CICA going offline, and switches FD over to CICB, within a minute of the offline event.

2. CICA comes back online after exceeding the Offline Storage Setting time frame. Because of this, existing BED1 data is deleted from CICA, and NEW BED1 data collection begins on CICA. At this point, CICA and CICB are BOTH FD'ing BED1.
3. The Multi-FD Rule does not allow more than one CIC Pro to FD the same bed at the same time (only the data that goes the farthest back in time (CICB) is kept). Because of this, CICB continues FD'ing BED1, and CICA stops.

NOTE

At every wake-up cycle (1 minute interval), the CIC Pro master scans all CIC Pros within the unit to determine if more than one CIC Pro is FD'ing the same bed (this can happen as part of normal operation). If the master detects this condition, all CIC Pros are instructed to stop FD'ing the bed *except* for the one CIC Pro with the **oldest** data for the bed.

Combo mode (Twin-Bed Rule)

In combo mode:

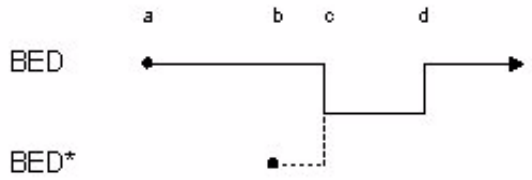
1. Two beds are on the network: one is a hardwired bed, and the other is telemetry bed. Both beds share the same name (e.g. BED), but '*' is added to the telemetry bed name (e.g. BED and BED*). Both beds represent the same patient. NOTE: If NOT in combo mode, these two beds would be treated as distinct and separate.
2. Only the oldest bed data is kept. Data for the other bed is deleted.
3. No matter which data is kept, FD continues, and the data is stored under the bed name, but without the '*'.
4. Combo mode is stopped (breaking combo) by discharging either bed. If this happens, FD continues on the UNDISCHARGED bed, and the data is stored under the UNDISCHARGED bed name.

   NOTE

   If the hardwired bed is discharged, '*' would again be included in the name.

To follow are combo mode examples:

Combo Mode Example 1:



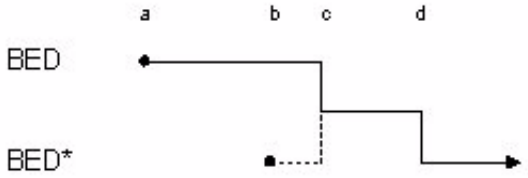
a. A hardwired bed BED is admitted and is FD'ed.

b. A telemetry bed BED* is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (possibly on a different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED data is kept because it is older than BED* data, and BED* data is deleted. FD continues, and the data is stored under the name BED.

d. Combo is broken by discharging BED*. FD continues, with the data is still stored under the name BED.

Combo Mode Example 2:



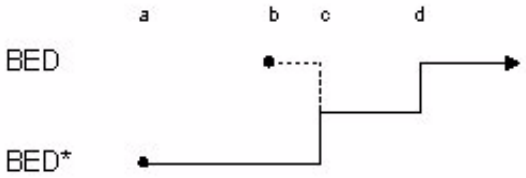
a. A hardwired bed BED is admitted and is FD'ed.

b. A telemetry bed BED* is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (possibly on a different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED data is kept because it is older than BED* data, and BED* data is deleted. FD continues, and the data is stored under the name BED.

d. Combo is broken by discharging BED. FD continues, with the data is NOW stored under the name BED*.

Combo Mode Example 3:



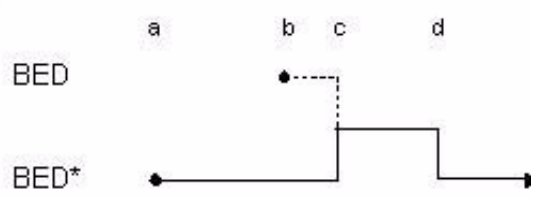
a. A telemetry bed BED* is admitted and is FD'ed.

b. A hardwire bed BED is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (possibly on a different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED* data is kept because it is older than BED data, and BED data is deleted. FD continues, and the data is stored under the name BED*.

d. Combo is broken by discharging BED*. FD continues, with the data is still stored under the name BED.

Combo Mode Example 4:



a. A telemetry bed BED* is admitted and is FD'ed.

b. A hardwired bed BED is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (possibly on a different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED* data is kept because it is older than BED data, and BED data is deleted. FD continues, and the data is stored under the name BED.

d. Combo is broken by discharging BED. FD continues, with the data is NOW stored under the name BED*.

Bed Name/IP Address Changes

The CIC Pro tracks FD data for individual beds using a combination of bed name and IP address.

If a bed name changes during FD, information within the data reflects the new name at the point the name change occurred.

If a bed IP address changes during FD, but the name does not, it is interpreted as a new and different bed, and a new FD data store is created and utilized for the new bed.

If a bed goes offline, and another bed with the same name but a different IP address comes online, it is interpreted as a new and different bed and a FD data store is created and utilized for it. However, the following conditions apply:

- If the bed that went offline (with the original IP address) comes back online within the Offline Storage Setting time frame, the two beds continue to be treated as separate, since the different IP addresses positively identify them as distinct and separate.
- If the bed that went offline (with the original IP address) DOES NOT come back online within the Offline Storage Setting time frame, the bed with the new IP address is interpreted as a REPLACEMENT for the bed with the original IP address. In this case, the FD data for the bed with the original IP address is deleted, and FD continues, storing data for the bed with the new IP address ONLY.

Unit Boundary

- Each unit operates independently with respect to Full Disclosure. The only interaction is when displaying data across units.
- License Mode – All beds within a unit will have access to the same amount of data storage (based on time) unless there is a failure to get a license (0 hours). Can be different across different units (i.e. UnitA-72hours, UnitB-None (1hour).
- Start-up Mode – The same start-up rules apply to all beds within a Unit.

- Default – The same FD defaults are used on all CIC Pros within a unit.
- Master – One per unit.
- Acquisition/Storage – The master CIC Pro will only assign beds within the unit to CIC Pros within that Unit. At no time will data for a bed be stored on a CIC Pro in a different unit.
- Bed Unit Changes – If a bed changes its unit name while being FD'd, all data for the bed is deleted. The unit where the bed moved becomes responsible for the bed.
- CIC Pro Unit Changes – If a CIC Pro changes its unit name while FD'ing beds, all data for all beds being FD'd by that CIC Pro is deleted. The unit with the original name is responsible for the beds.

CIC Pro Service Logons

The following table lists all logons associated with CIC Pro service.

CIC Pro Service Logons			
Logon Description	**User Name**	**Password**	**Additional Information**
Webmin	service	salsa1,3,5,7	"Webmin Login" on page 2-18
CIC Pro Service Tool	admin	tango1,3,5,7	"Logon" on page 2-24
CIC Pro Administrator	administrator	admin1,3,5,7	"Administrator Logon" on page 2-16
CIC Pro Service Mode	N/A	mms_cic	Accessed from the *Service Password* tab within the CIC Pro application
Command-Line Utilities	N/A	mms_com	"CIC Pro Command-line Utilities" on page 2-29

System Logons

The following procedures provide CIC Pro software access at the operating system level. Each logon provides a different level of accessibility at startup. Follow these steps to logon as appropriate.

CAUTION
If the beds admitted at this CIC Pro are not transferred to a different monitoring station, they are unmonitored while this CIC Pro is shut down. Beds admitted on this CIC Pro display "NO COMM" at other locations if they are not admitted elsewhere.

To shut down the CIC Pro application and log on as a different user:

1. Select *Setup CIC*.
2. Select the *Service Password* tab.
3. Type **mms_com** as the Password and press **Enter**.
4. In the Windows command prompt that opens, type **stop** and then press **Enter**.
5. Click on *Start* then select *Shut Down* and *Log off as CIC* and press **Enter**.

6. Hold down the LEFT **Shift** key and select *Yes*. Continue holding until prompted for the password.
7. Choose from the following logons and continue as instructed.

Administrator Logon

User name: type **administrator** and press **Tab.**

Password: type **admin1,3,5,7** and press **Enter**.

Run-time Logon

User name: type **cic** and press **Tab.**

Password: type **cic** and press **Enter**.

CIC Pro Service Mode

The CIC Pro service mode is accessed from within the CIC Pro application by clicking the *Setup CIC* button and clicking the *Service Password* tab.

Password: type **mms_cic** and press **Enter**.

The service mode is required to configure a number of CIC Pro application settings.

Service Utilities

The Service Utilities provide several advanced and specialized functions for configuring and troubleshooting the CIC Pro.

WARNING
CIC Pro service utilities are intended for use ONLY by properly trained, qualified personnel. Do NOT "experiment" with the service utilities, or use them in any way other than shown in this manual. Consequences of misuse include loss of patient data, corruption of CIC Pro or operating system software, or disruption of the entire Unity Network MC network.

Webmin Overview

Webmin, an internet-based web application, is used for CIC Pro administration and service.

Local Webmin Access from the CIC Pro Computer

1. Click the *Browse* button in the upper right corner of the CIC Pro multiple patient viewer window.

   NOTE
   If there is no *Browse* button, or if the button is disabled, see "Browser Configuration" on page 3-38.

2. Depending upon browser configuration, select either the *Favorites* menu or the star icon. Select *LocalWebmin*.

Remote Webmin Access from an Intranet Computer

Intranet Domain Configuration

The intranet computer (usually an FE laptop) must be TCP/IP configured for contacting the CIC Pro before you can connect to Webmin:

- The intranet computer IP address scheme must be the same as the CIC Pro.
- Optional subnet mask and default gateway settings on the intranet computer must match the CIC Pro.

If necessary, refer to the CIC Pro IP address labels or the site survey documentation for CIC Pro intranet domain settings.

Intranet Computer LAN Configuration

It may be necessary to change the Internet Explorer LAN settings on the intranet computer to connect to Webmin. To change Internet Explorer LAN settings:

1. In Internet Explorer, select *Tools* > *Internet Options*.
2. Click the *Connections* tab.
3. Click *LAN Settings*.
4. Disable the *Automatic Configuration* and/or *Proxy Server* selections, as required.
5. Click *OK*.

Connect to Webmin

1. Connect the intranet computer to a Unity Network IX network switch, or connect the intranet computer directly to the CIC Pro Unity Network IX network connection port using a crossover cable.
2. Start the Internet Explorer application.
3. Type **http://[CIC Pro server IP address]:10000** into the *Address* field and press **Enter**.

NOTE

[CIC Pro server IP address] is the Unity Network IX network IP address for the CIC Pro server.

Webmin Login

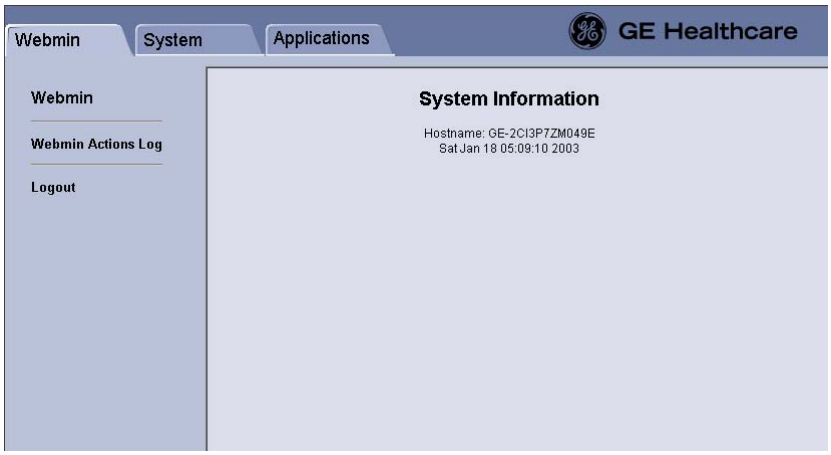
- *Username*: **service**
- *Password*: **salsa1,3,5,7**

  This password uses the number 1, not the letter l.

Webmin functionality is divided across a number of different tab screens. Refer to the following locations for more information about functionality associated with each screen:

- "Webmin Tab" on page 2-19.
- "System Tab" on page 2-20.
- "Applications Tab", starting on page 2-21.

Webmin Tab



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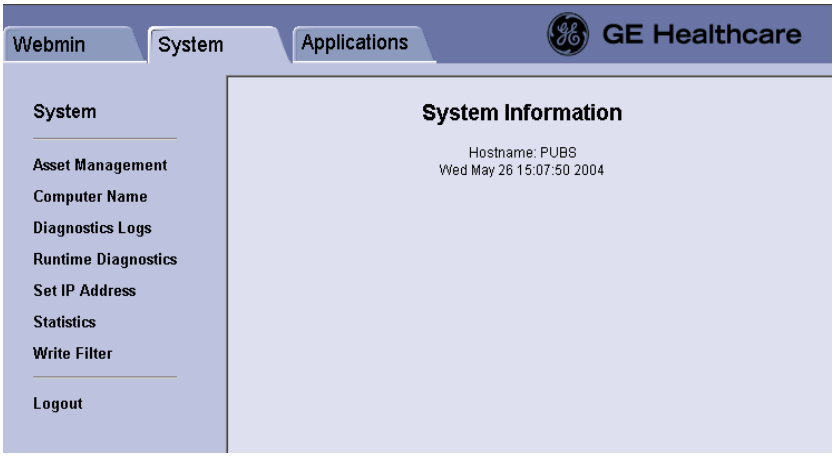
The following links are found on the *Webmin* tab.

Webmin Tab Links and Descriptions	
Link Name	**Description**
Webmin Actions Log	Includes a utility for viewing CIC Pro Webmin activity over a configurable period of time. See "Webmin Actions Log" on page 5-9.
Logout	Logs user out of Webmin application and displays the login window.

System Tab



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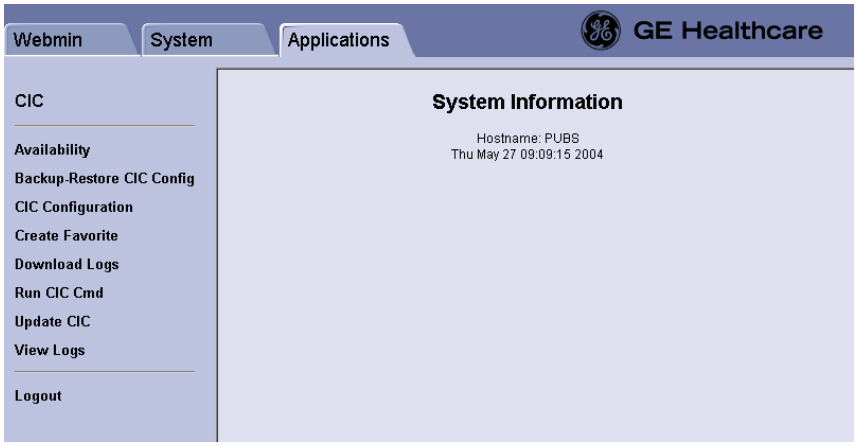
The following links are found on the *System* tab.

System Tab Links and Descriptions	
Link Name	**Description**
Asset Management	Includes utilities for viewing CIC Pro part number/serial number information and listing Unity Network devices connected to the Unity Network MC network. See "CIC Pro Part/Serial Number Utility" on page 5-3 and "Unity Devices" on page 5-6.
Computer Name	Used to configure CIC Pro computer name and reset licensing for a reconfigured computer name. See "Computer Name Configuration" on page 3-23.
Diagnostics Logs	Used to download CIC Pro diagnostic logs. See "Diagnostic Logs" on page 5-4.
Runtime Diagnostics	Includes a wide variety of system runtime diagnostic utilities. See "Runtime Diagnostics" on page 5-5. Also see "Webmin Runtime Diagnostics Utilities" on page C-1. for details about specific runtime diagnostics utilities.
Set IP Address	Used to configure CIC Pro IP addresses. See "IP Address Configuration" on page 3-19.
Statistics	Includes utilities for viewing operating system runtime and fan runtime statistics. See "CIC Pro Operating System Runtime Statistics" on page 5-10 and "Fan Runtime Statistics" on page 5-6.
Write Filter	Includes CIC Pro write filter utilities. See "IP Address Configuration" on page 3-19.
Logout	Logs user out of Webmin application and displays the login window.

Applications Tab



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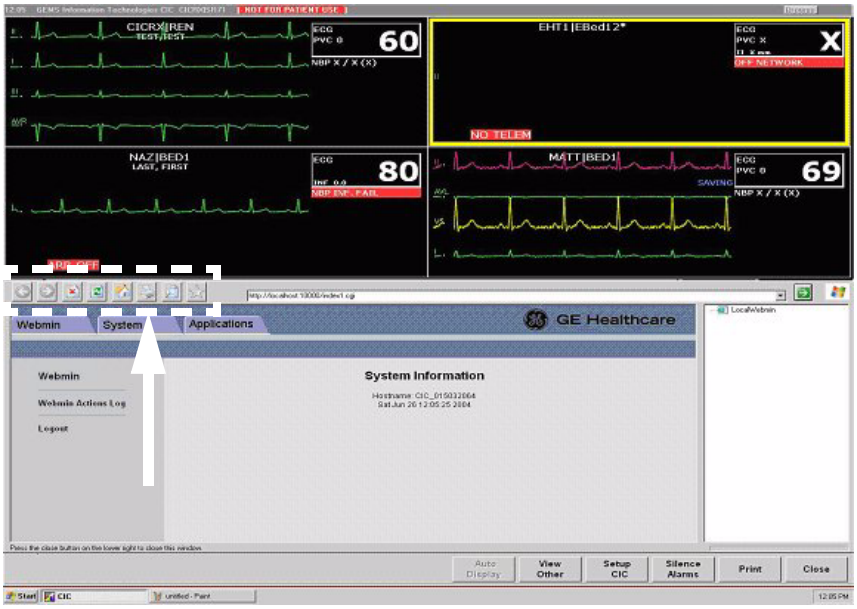
The following links are found on the *Applications* tab screen.

Application Tab Links and Descriptions	
Link Name	**Description**
Availability	Used to view the uptime availability of the CIC Pro over a configurable period of time. See "Availability (CIC Pro Uptime Report)" on page 5-11.
Backup-Restore CIC Configuration	Utility which allows you to backup and restore certain tools, data files and list files. See "Backup-Restore CIC Configuration" on page 4-16.
CIC Configuration	Used to add/delete laser printers, view printer configuration information, and to configure the CIC Pro workstation language settings. See "Network Laser Printer Installation/Deletion" on page 3-26, "Printer Configuration Information" on page 5-7 and "Change CIC Pro Language" on page 3-54.
Create Favorite	Used to add favorites to the CIC Pro server browser *Favorites* menu. See "Create Webmin Favorite" on page 3-41.
Download Logs	Used to download CIC Pro log files. See "Download Logs (Webmin)" on page 5-19.
Run CIC Cmd	Used to run CIC Pro commands. Similar in function to "CIC Pro Command-line Utilities" on page 2-29.
Update CIC	Used to install CIC Pro software upgrades. See the CIC Pro Clinical Information Center Upgrade Instructions.
View Logs	Used to view CIC Pro log files. See "View Logs (Webmin)" on page 5-18.
Logout	Logs user out of Webmin application and displays the login window.

Integrated Internet Explorer Browser Interface

When CIC Pro *Browser Configuration* is set to *Integrated* mode (see "Browser Configuration" on page 3-38), icons are used for navigation instead of menus.



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The following table describes integrated browser icon functionality:

Icon	Description	Function
	Back navigation button	Click to return to previous webpage (previous webpage must be cached).
	Forward navigation button	Click to advance to next webpage (next webpage must be cached).
	Stop button	Click to stop the webpage loading process.
	Reload button	Click to reload the current webpage.
	Home button	Click to go to the home webpage. The home webpage is set by configuring internet options in Internet Explorer. See "Browser Setup" on page 3-39.

Icon	Description	Function
	Print button	Click to print the current webpage.
	Print preview button	Disabled in this release of the CIC Pro software.
	Favorites button	Click to view a list of webpage shortcuts (favorites). List displays in the right frame in the browser. See "Create Webmin Favorite" on page 3-41 to add to this list of shortcuts.

CIC Service Tool

The *CIC Service Tool* is available from the Windows desktop. It consolidates access to several service utilities and functions in one area.

NOTE

The Windows desktop is available only if using a full-access logon when starting up the CIC Pro. See "Administrator Logon" on page 2-16.

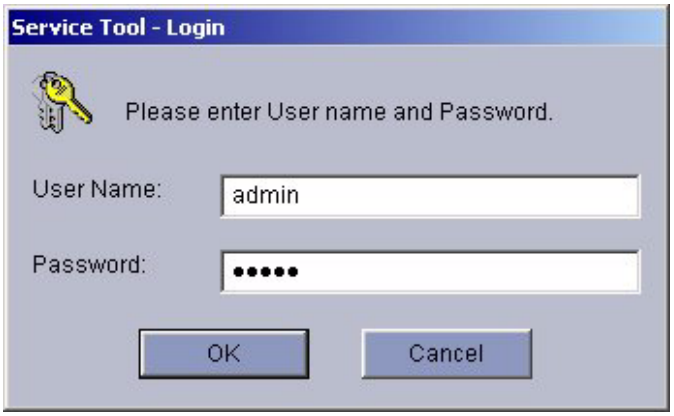
Logon

1. If necessary, shut down the CIC Pro application and log on using a full-access logon according to "Administrator Logon" on page 2-16.

CAUTION

If the beds admitted at this CIC Pro are not transferred to a different monitoring station, they are unmonitored while this CIC Pro is shut down. Beds admitted on this CIC Pro display "NO COMM" at other locations if they are not admitted elsewhere.

2. Double-click the *CIC Service Tool* icon on the Windows desktop. The *Service Tool - Login* window displays.



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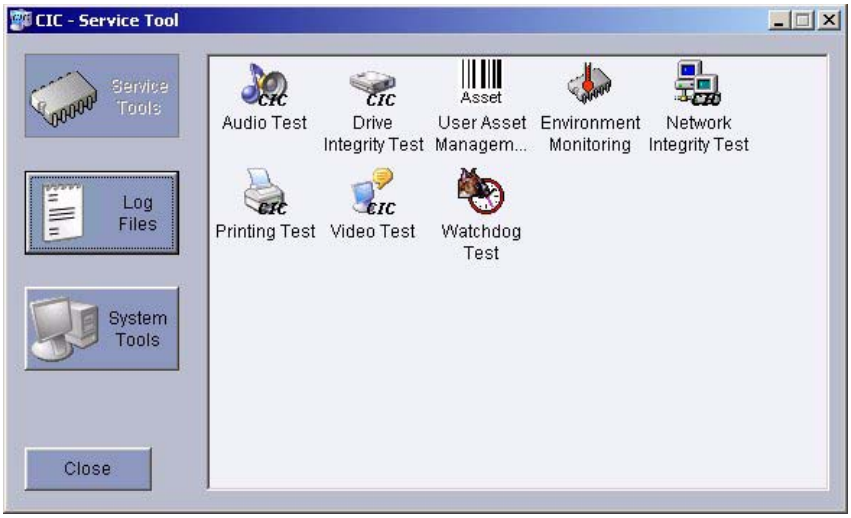
3. Type **admin** into the *User Name* field, and **tango1,3,5,7** into the *Password* field. Click *OK*. The *CIC - Service Tool* window displays.

NOTE

To close the CIC Service Tool at any time, click the *Close* button at the bottom left corner of the window.

Service Tools

Click the *Service Tools* button to display the available service tool buttons.



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Double-click the icon to open the associated tool/utility.

NOTE

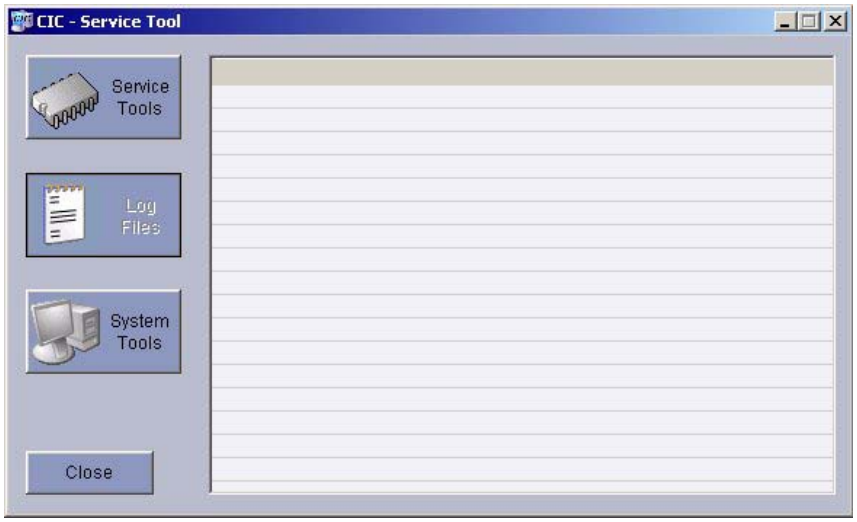
See "CIC Pro Service Tools" on page D-1 for procedures using the *Service Tools*.

Service Tools Icons and Descriptions	
Icon Name	**Description**
Audio Test.	Tests the CIC Pro computer audio equipment function. See "Audio Test" on page D-4.
Drive Integrity Test	Tests the read/write integrity of CIC Pro computer electronic storage media (see "Drive Integrity Test" on page D-6). Similar to the DOS *chkdsk* utility (see "Disk Check" on page 4-29).
User Asset Management	Displays CIC Pro asset management information. See "User Asset Management" on page D-8.
Environmental Monitoring	Tests the status of the CIC Pro computer hardware environment, and environment-effecting components, such as voltage, fans, and temperature. See "Environment Monitoring" on page D-9.
Network Integrity Test	Tests connectivity to network devices. Similar to DOS *ping* utility. (ApexPro Telemetry Server will not return ping over the Unity Network IX network). See "Network Integrity Test" on page D-11.
Printing Test	Tests CIC Pro printing function (printer installation, configuration, connectivity, etc.). See "Printing Test" on page D-13.

Service Tools Icons and Descriptions	
Icon Name	**Description**
Video Test.	Tests CIC Pro video function. See "Video Test" on page D-15.
Watchdog Test.	Tests CIC Pro watchdog countdown function. See "Watchdog Test" on page D-18.

Log Files

Click the *Log Files* button to display CIC Pro log files.



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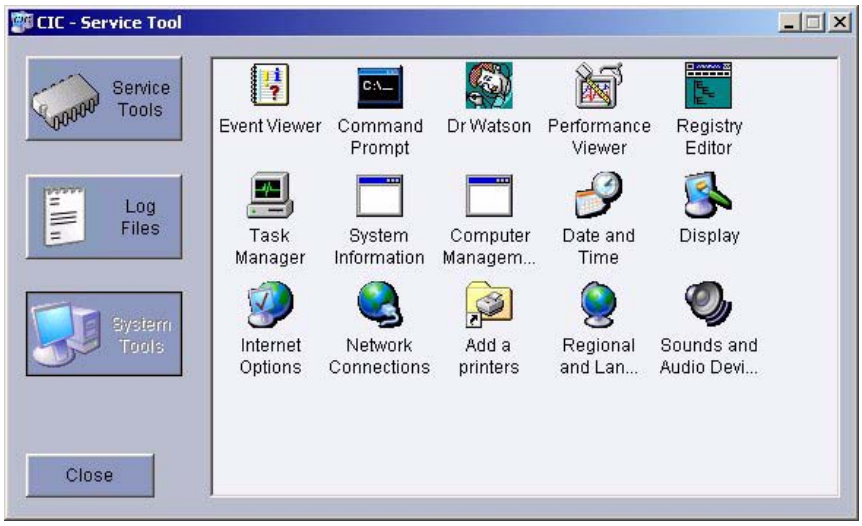
System Tools

Click the *System Tools* button to display the available service tool buttons.



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Double-click the icons to open the associated tool/utility. For more information about Windows tools, refer to documentation for the specific Windows operating system supplied with the CIC Pro.

Service Tools Icons and Descriptions

Icon Name	Description
Event Viewer.	Opens the Windows *Event Viewer* window.
Command Prompt.	Opens a Windows command prompt window.
Dr. Watson.	Opens the *Dr. Watson for Windows* utility. Dr. Watson is used to help detect, decode and log errors that are encountered while windows or windows programs are running.
Performance Viewer.	Opens the Windows *Performance* window.
Registry Editor.	Opens the Windows *Registry Editor* window.
Task Manager.	Opens the *Windows Task Manager* window.
System Information.	Displays system information.
Computer Management	Opens the Windows *Computer Management* window.
Date and Time	Opens the Windows *Date and Time Properties* window. See "You must restart the CIC Pro for the new IP Address settings to take effect." on page 3-22.
Display	Opens the Windows *Display Properties* window. See "Incorrect CIC Pro Application Colors" on page 5-12.
Internet Options	Opens the Windows *Internet Properties* window. See "Browser Setup" on page 3-39.

Service Tools Icons and Descriptions	
Icon Name	**Description**
Network Connections.	Opens the Windows *Network Connections* window.
Add a printer	Opens the Windows *Add Printer Wizard* utility. See "Printer Installation" on page 3-25.
Regional and Languages	Opens the Windows *Regional and Language Options* window. **NOTE:** See "Completion" on page 3-60 for the preferred procedure for changing languages.
Sounds and Audio Devices	Opens the Windows *Sounds and Audio Devices Properties* window.

Miscellaneous Service Utilities

CIC Pro Command-line Utilities

The command-line utilities use the Windows DOS command prompt for configuring and troubleshooting the CIC Pro software.

WARNING
Command-line utilities are intended for use ONLY by qualified personnel with training and experience with their use. Do NOT "experiment" with any commands other than those shown in this manual. The consequences of misuse include loss of patient data, corruption of CIC Pro or operating system software, or disruption of the entire Unity Network MC network.

To run the command-line utilities:

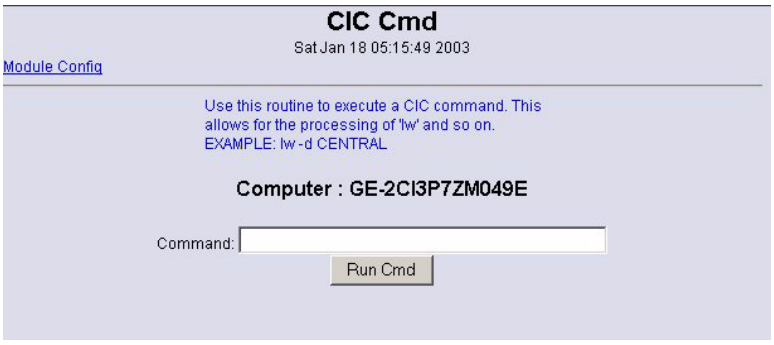
1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the *service password* prompt type **mms_com** and press **Enter**. This enables and displays a DOS command prompt window.

Run CIC Cmd (Webmin)

You can also run command-line utilities using Webmin. Webmin provides a command prompt interface.

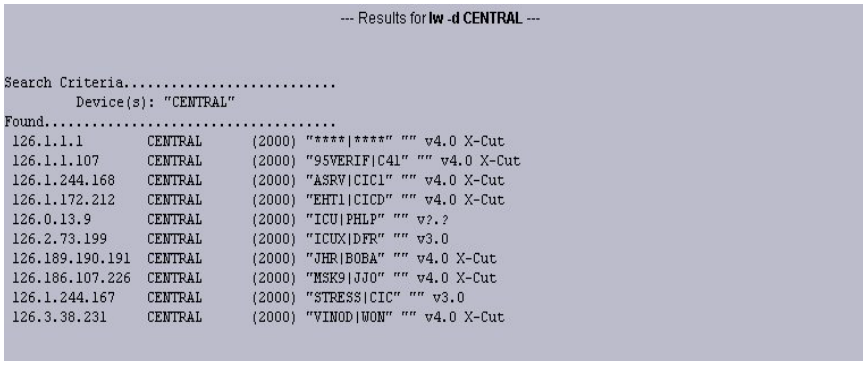
To run command-line utilities, using the Webmin interface:

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *Applications* tab.
3. Click the *Run CIC Cmd* link to access the *Run CIC Cmd* window.


CIC Cmd
Sat Jan 18 05:15:49 2003
Module Config
Use this routine to execute a CIC command. This allows for the processing of 'lw' and so on.
EXAMPLE: lw -d CENTRAL
Computer : GE-2CI3P7ZM049E
Command:
Run Cmd

The *Run CIC Cmd* window allows you to execute single line Windows Command Prompts specific to CIC Pro.

1. Type the CIC Pro command code into the *Command* field.
2. Click *Run Cmd*.


--- Results for lw -d CENTRAL ---
Search Criteria.....
Device(s): "CENTRAL"
Found.....
126.1.1.1 CENTRAL (2000) "****|****" "" v4.0 X-Cut
126.1.1.107 CENTRAL (2000) "95VERIF|C41" "" v4.0 X-Cut
126.1.244.168 CENTRAL (2000) "ASRV|CIC1" "" v4.0 X-Cut
126.1.172.212 CENTRAL (2000) "EHT1|CICD" "" v4.0 X-Cut
126.0.13.9 CENTRAL (2000) "ICU|PHLP" "" v?.?
126.2.73.199 CENTRAL (2000) "ICUX|DFR" "" v3.0
126.189.190.191 CENTRAL (2000) "JHR|BOBA" "" v4.0 X-Cut
126.186.107.226 CENTRAL (2000) "MSK9|JJO" "" v4.0 X-Cut
126.1.244.167 CENTRAL (2000) "STRESS|CIC" "" v3.0
126.3.38.231 CENTRAL (2000) "VINOD|WON" "" v4.0 X-Cut

Feedback Indicators

Error/Warning Messages

WARNING
LOSS OF MONITORING — If monitoring at the CIC Pro is temporarily interrupted, alternate monitoring devices or close observation should be used until the monitoring function at the CIC Pro is restored.

"Loss of monitoring function" indicators:

- RED SCREEN (RED/GRAY screen for second monitor in dual-display configured systems) indicates the CIC Pro application is restarting itself and patient monitoring at the CIC Pro is NOT occurring. The monitoring function at the CIC Pro will automatically resume. No user action is required.
- BLUE SCREEN indicates the Windows XPe operating system has a functional error and patient monitoring at the CIC Pro is NOT occurring. If the CIC Pro does not automatically restart after 60 seconds, the monitoring function at the CIC Pro will not resume until you turn off the power to the CIC Pro and then turn the power back on. The monitoring function should resume in approximately 3 to 4 minutes.

Once the monitoring function at the CIC Pro has been restored, you should verify the correct monitoring state and alarm function.

Audible Alarms

The CIC Pro is equipped with two internal speakers, and an external speaker connection.

On a mirrored CIC, it may be desirable to reduce the alarm volume to *OFF*. See "Set the Alarm Volume" on page 3-37.

NOTE
External speakers are normally connected during operation. An alert message displays if this connection is broken.

System Environment Monitor Alert Messages

Alert messages display at the bottom of the screen if the CIC Pro detects an error condition.

For your notes

3 Installation

For your notes

Pre-Installation Requirements

Read and fully understand the following pre-installation requirements. Verify all requirements are met before starting CIC Pro system installation.

Site Requirements

The CIC Pro is capable of producing heat. It must be physically located to provide proper cooling ventilation.

WARNINGS

SERVER LOCATION — The CIC Pro is UL/IEC/EN 60601-1 certified equipment which may not meet the leakage requirements for patient care area equipment. The CIC Pro must not be located in the patient vicinity as a shock hazard may exist, unless the medical electrical system standard, UL/IEC/EN 60601-1 is followed.

Failure to adequately ventilate the CIC Pro may cause equipment failure or improper operating conditions which may endanger the patients being monitored.

CAUTION

The CIC Pro uses an internal forced-air cooling system, but most displays do not. The user must determine the heat dissipation requirements of the selected display and provide for any required cooling ventilation.

Environmental Limits

The CIC Pro operates reliably within normal office environmental limits. Select a site which meets the following criteria:

- Clean and reasonably free of excess dust. Dust accelerates system wear.
- Well ventilated and away from sources of heat.
- Away from sources of vibration or physical shock.

Electromagnetic Fields and Electrical Noise

The CIC Pro should be isolated from strong electromagnetic fields and electrical noise produced by electrical devices such as:

- Elevators
- Copy machines
- Air conditioners, large fans
- Large electric motors
- Radio and TV transmitters
- High frequency security devices
- High-load medical devices (e.g. imaging, defibrillators, etc.)

Clearance and Airflow

Keep the CIC Pro ventilation openings free of obstructions. The CIC Pro physical location should provide at least the following minimal ventilation clearances:

Minimum Ventilation Clearance	
Front	20.5 centimeters (8 inches)
Back	20.5 centimeters (8 inches)
[1]Bottom	1 centimeter (3/8 inches)

1. The vent holes in the bottom of the unit must not be obstructed. A minimum airspace of 1 centimeter (3/8") must be provided between the vent holes and the supporting surface. When installed with the bottom vent holes down, the unit must be on a hard flat surface with the bottom feet intact.

   Do not remove the bottom feet or operate with the bottom of the unit on a carpeted surface.

   If installed with the vent holes in the bottom surface to the side (standing on a side, or "vertical" installation), a minimum of 1 centimeter (3/8") clearance must be provided between the vent holes and the adjacent surface.

Access Space

Provide ample access space for CIC Pro maintenance, especially at the back, to allow access to cable and power connections.

WARNING
Ample access for AC power cord disconnect (from the wall outlet, or from the back of the unit) is vital to provide positive AC power disconnection for service or in the event of emergency.

Physical Specifications

Refer to "Physical Specifications" on page A-4

Power Requirements

Duplex Wall Receptacles

WARNING
If power to the CIC Pro is lost, patient monitoring information will no longer be displayed or stored.

A properly grounded duplex wall receptacle is required for each CIC Pro. Additional receptacles may be required to accommodate connected peripheral equipment. The wall receptacle must be installed in an approved junction box. Use only a three-prong, polarized, hospital-grade wall receptacle to accept the three-prong polarized CIC Pro power plug.

WARNING
DO NOT use plug adapters that defeat the grounding capability of the three-prong power plug. An ungrounded electrical device presents a potentially severe and dangerous shock hazard.

Equipment Grounding

WARNING
SHOCK HAZARD — The CIC Pro and all peripheral equipment must be adequately grounded or a shock hazard may exist.

DO NOT use plug adapters that defeat the grounding capability of the three-prong power plug. An ungrounded electrical device presents a potentially severe and dangerous shock hazard.

The grounding pin of all wall receptacles and all exposed metal parts (beds, radiators, water pipes, etc.) in any patient area should be electrically connected together. This common ground point should be connected to the nearest equipotential ground through a bonded grounding system, or with a 10 AWG stranded copper grounding cable.

The equipotential ground point should be as close to earth ground potential as possible. If a bonded grounding system is not available, the ground pin of each wall receptacle must be individually connected to a central grounding point. Do NOT jumper from ground pin-to-ground pin of the receptacles.

The grounding system must not carry current, such as a grounded neutral, since the current flow will produce potential differences along the ground path. These potential differences are a shock hazard source for equipment users and patients.

Do NOT use conduit as a ground conductor. Plastic (PVC) piping or fittings used in the conduit runs can break the electrical connection to ground, resulting in potential shock hazards.

The electrical grounding system should be connected to an earth ground. If this is not possible, then a good ground reference, such as a metal water pipe, or an electrically-conductive building component, should be used. IT IS MORE IMPORTANT THAT ALL GROUNDED OBJECTS IN THE PATIENT AREA ARE AT THE SAME GROUND POTENTIAL RATHER THAN AT EARTH GROUND POTENTIAL.

Un-Interruptible Power Supplies

UPS Installations

See "Optional Components" on page 6-25 for a listing of UPS units available for the CIC Pro.

GE Medical Systems *Information Technologies* recommends using an un-interruptible power supply (UPS) with the CIC Pro system.

Without a UPS, power line outages may result in:

- Improper shut down of the CIC Pro system, causing lengthy disk scan procedures on reboot
- Data loss.

Follow the manufacturer's recommendations for installing the UPS.

UPS Run-times and Options

CAUTION
Connect the UPS to the CIC Pro (s) and display monitor(s) only. Do NOT connect printers or other devices to a UPS, as such devices may shorten estimated run-times. If AC line power is not restored before UPS run-time is exceeded, the CIC Pro shuts down and patients will not be monitored.

UPS run-times are affected by:

- Battery age,
- Ambient temperature,
- Site specific UPS usage patterns, and
- Load characteristics.

Your actual run times may be different..

UPS Description	Runtime Estimates
Power Supply UPS 600VA 120 Volts	One CIC Pro with one 18” or 20” display for approximately 60 minutes (Approximate total load = 90 watts)
	One CIC Pro with two 18” or 20” displays for approximately 38 minutes (Approximate total load = 140 watts)
	Two CIC Pros with two 18” or 20” displays for approximately 30 minutes (Approximate total load = 180 watts)

As a point of reference, the CIC Pro V4.1 CPU typically draws about 40 watts, and the 20" and the 18" displays each typically draw about 50 watts.

Refer to “Optional Components” on page 6-25 for UPS part number information.

Pre-Installation Check

1. Complete "Pre-Installation Requirements" on page 3-3.
2. Prepare and install the UPS device according to the manufacturer's instructions.
3. Remove all equipment, including all peripheral devices, from the shipping cartons. Inspect for damage. If any damage is found, contact GE Medical Systems *Information Technologies* Technical Support.
4. Identify all required cables and prepare them for installation.

Installation

WARNINGS

CIC Pro V4.1.x IS in-unit compatible with CIC Pro V4.0.x, but IS NOT with versions of CIC Pro V3.1 or earlier. Sharing of the same care unit name across central stations having incompatible software versions can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms.

Both hardwire and telemetry beds are limited in the number of remote view connections that can be supported.

Do not exceed a maximum of 15 CIC Pros in a single logical care unit.

Attempting simultaneous displays of a patient monitor (bedside or telemetry) at too many CIC Pros may cause lost or intermittent communication between CIC Pros and the patient monitor. This is evidenced by NO COMM or intermittent communication conditions for the beds.

The maximum CIC Pros viewing a patient bedside monitor can vary depending on bedside monitor capabilities and network design.

WARNINGS

Only external devices specifically designed to be connected to the CIC Pro, or approved by GE Medical Systems *Information Technologies* for use with the CIC Pro system, should be connected, as specified in this manual or as otherwise specified by the manufacturer.

A shock hazard may exist if external devices are connected differently from described in this manual, or as directed by the manufacturer.

External equipment must be connected to the CIC Pro only by qualified biomedical engineering personnel.

When using keyboard/video/mouse (KVM) switching devices with the CIC Pro, only the keyboard and mouse should be switched through the KVM. The video for each CIC Pro should be displayed on its own monitor. Failure to do so may result in delayed recognition of alarm events.

CAUTIONS

All external cabling used with the CIC Pro must be routed so it does not interfere with access to, or operation of, the CIC Pro system. Install cabling to guard against tripping and accidental cable disconnection.

Do NOT apply power until all equipment is installed and ready for use.

This assembly is static sensitive and should be handled using precautions to prevent electrostatic discharge damage.

Physical Installation

The CIC Pro may be physically mounted using one of the following strategies:

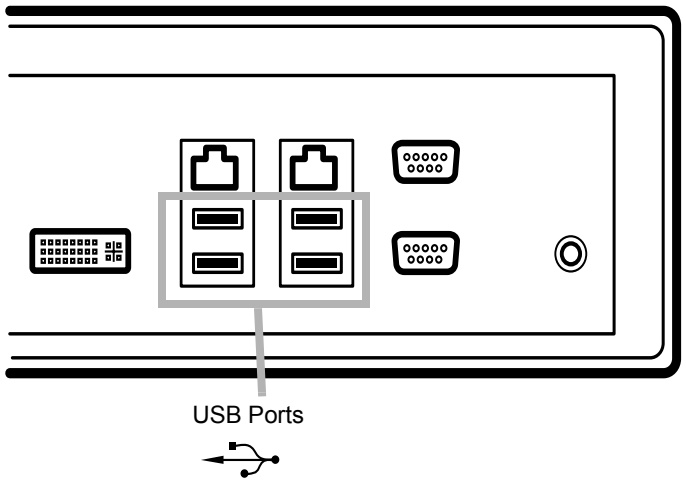
- Desktop — The CIC Pro may be placed on a desktop, under the monitor stand/base, or on a shelf or floor without the use of any mounting hardware.
- Wall Mounting — The CIC Pro may be physically mounted to a wall or the bottom side of a desk or shelf using standard GCX mounting hardware.

Connect Keyboard and Mouse

Connect the keyboard and mouse cables to the USB ports on the back of the CIC Pro.

NOTE

Any available USB port can be used for keyboard/mouse connections.



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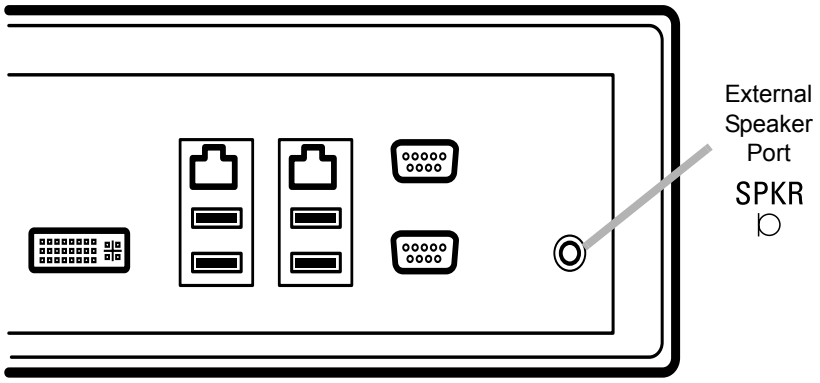
CAUTION

If using a Keyboard/Video/Mouse switching device that accepts either a USB or a PS/2 keyboard, use a PS/2 keyboard only. USB keyboards may not provide complete functionality in all languages.

Install the Speakers

In addition to two internal speakers, the CIC Pro is equipped with an 1/8” external speaker connection port.

WARNING
CIC Pro audible alarms will not sound for patients with bedside monitoring devices configured to “Operating Room” mode.



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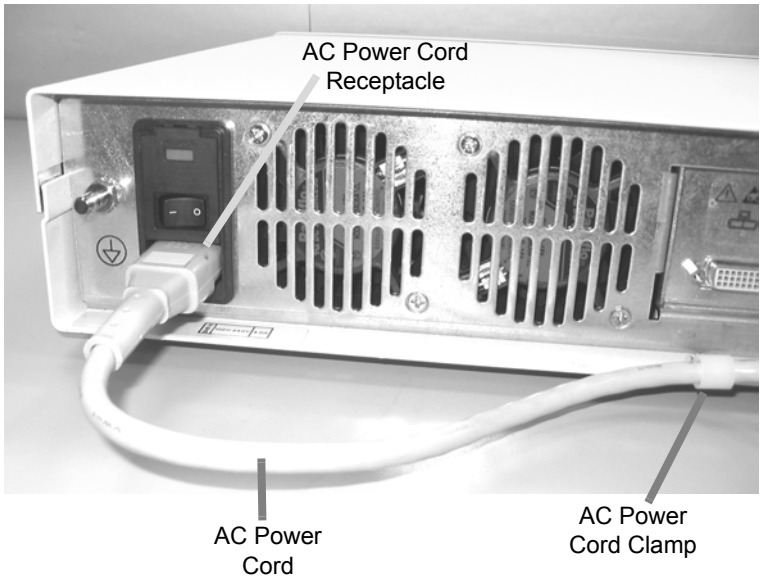
1. Identify the sound output jack on the back of the PC tower. The speaker output receptacle is labeled **SPKR**.
2. Plug the speaker into the sound output receptacle.

NOTE
External speakers are connected during normal operation. A alert message displays when no external speaker connection is present. This is true even if the CIC Pro is used as a mirrored CIC Pro and its audible alarm volume is set to *OFF*.

Install the Power Cord

1. Plug the AC power cord into the receptacle on the back of the CIC Pro.

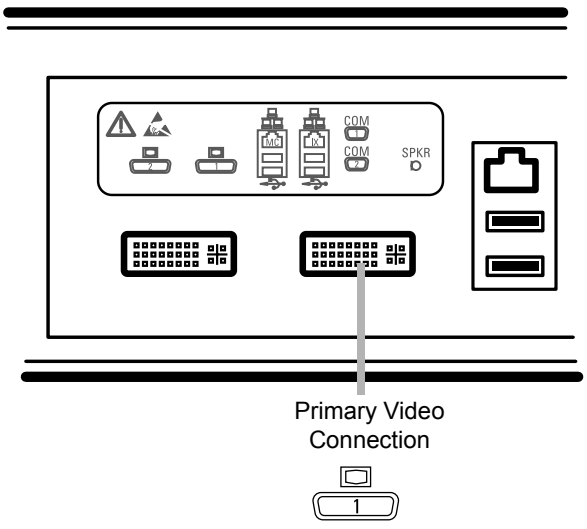


2. Install the provided cable clamp around the AC power cord.
3. Tighten the cable clamp screw to secure the clamp to the chassis.

Connect/Configure the Video Display

Connecting a Single Monitor

Plug the video display monitor into the primary video connection at the back of the CIC Pro.



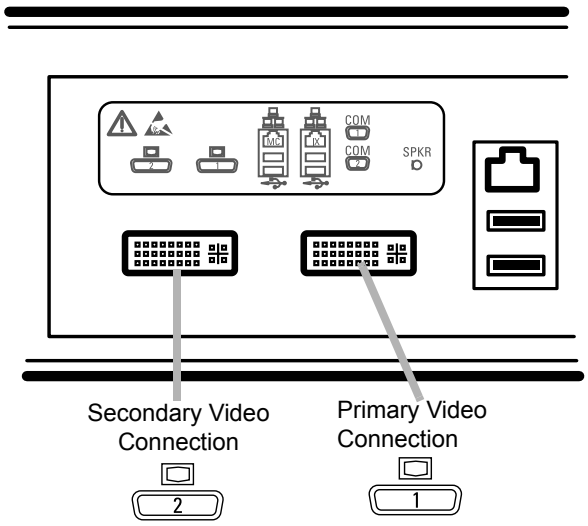
Connecting Dual Monitors

Dual monitors allow a desktop display area twice as wide as a single monitor.

1. If necessary, shut down the CIC Pro according to "Safe Shutdown/Restart Procedure" on page 4-4.
2. Plug the second monitor into the secondary video connection on the back of the CIC Pro.
3. Start the CIC Pro.

NOTE

The video connection supports DVI-A analog/digital connections. Analog VGA monitors require either a VGA to DVI-A connection cable, or a VGA to DVI-A plug adapter.



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Dual Display Configuration

NOTE

You should commit (save) the following configuration changes to the CIC Pro write filter:

- Dual display
- Touch screen display
- Printer installation

If a hard drive failure occurs, the CIC Pro does not save these uncommitted (unsaved) configuration changes. After the CIC Pro reboots, you must reconfigure these settings.

See "Commit Changes to the Write Filter" on page 3-57.

1. Type **mms_com** and press the **Enter** key. The Windows command prompt opens with:
   C:\Program Files\Marquette\CIC\4.1.x>
2. Type **stop** and press the **Enter** key.

3. Select *Start* > *Shut Down*, then select *Log off* [username].
4. Hold down the left **Shift** key and click **OK**. Continue holding the **Shift** key and wait for the log on screen.
5. Type **administrator**, press the **Tab** key and type **admin1,3,5,7** (with no spaces). Press the **Enter** key.
6. Right-click the *ATI* icon in the right corner of the toolbar at the bottom of the screen.

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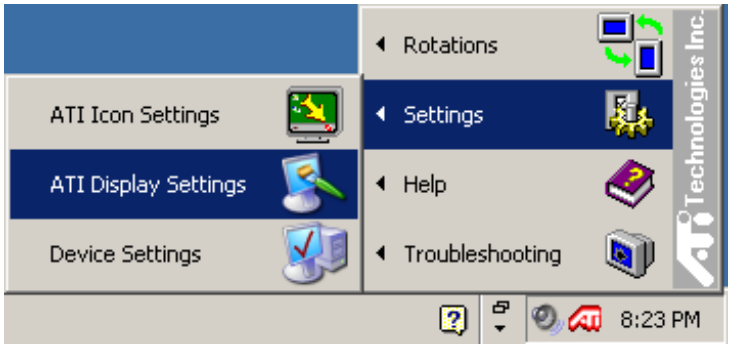
7. Select *Settings* > *ATI Display Settings*.



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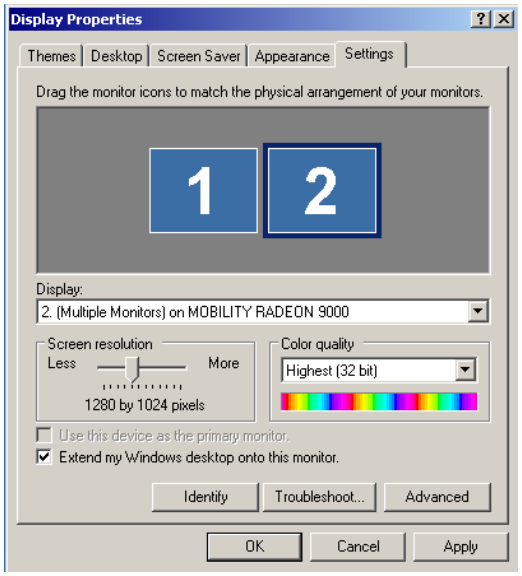
8. Click the *Settings* tab in the *Display Properties* window.
9. In the *Display Properties* window, click the *Settings* tab. Select the *2* monitor icon.



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10. Select the *Extend my Windows desktop onto the monitor* checkbox. Click *OK*. The desktop expands onto the secondary monitor.

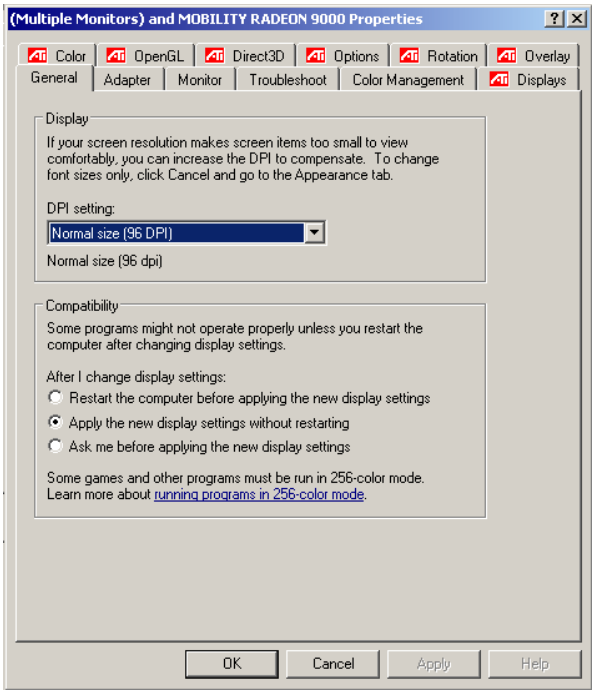
    NOTE

    The secondary monitor displays a mirror image of the primary monitor display if the *Extend my Windows desktop onto the monitor* checkbox is not selected.

11. If desired, change the *Screen resolution* setting for the *2* monitor. Note the setting and select the *1* monitor. Make sure the *Screen resolution* setting is the same for both monitors.

12. Click the *Apply,* and then the *Advanced,* buttons.

13. Select the *General* tab in the *(Multiple Monitors) and MOBILITY RADEON 9000 Properties* window.


(Multiple Monitors) and MOBILITY RADEON 9000 Properties
Color
OpenGL
Direct3D
Options
Rotation
Overlay
General
Adapter
Monitor
Troubleshoot
Color Management
Displays
Display
If your screen resolution makes screen items too small to view comfortably, you can increase the DPI to compensate. To change font sizes only, click Cancel and go to the Appearance tab.
DPI setting:
Normal size (96 DPI)
Normal size (96 dpi)
Compatibility
Some programs might not operate properly unless you restart the computer after changing display settings.
After I change display settings:
Restart the computer before applying the new display settings
Apply the new display settings without restarting
Ask me before applying the new display settings
Some games and other programs must be run in 256-color mode.
Learn more about running programs in 256-color mode.
OK
Cancel
Apply
Help

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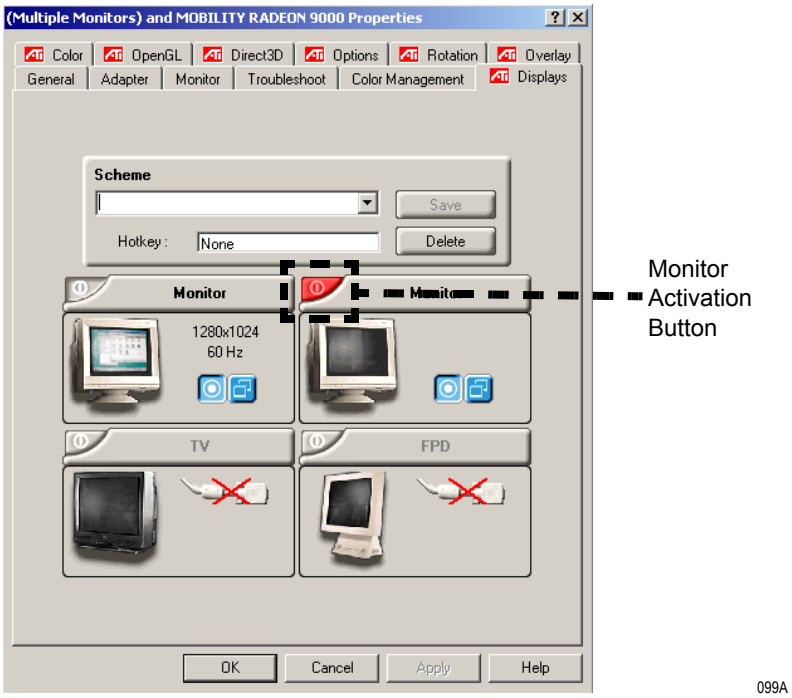
14. Select the *Apply the new display settings without restarting* radio button. Click *Apply*.

15. Select the *Displays* tab.



16. Click the monitor activation button for the newly connected secondary monitor.

NOTE

The monitor activation button is located in the upper left corner of the *Monitor* title bar. This button is red when the associated monitor is disabled, and changes to green when the monitor is activated.

17. Click *Apply*. Click *OK*. The display appears on the secondary monitor.
18. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

Connecting/Configuring Touchscreen Monitor

NOTE

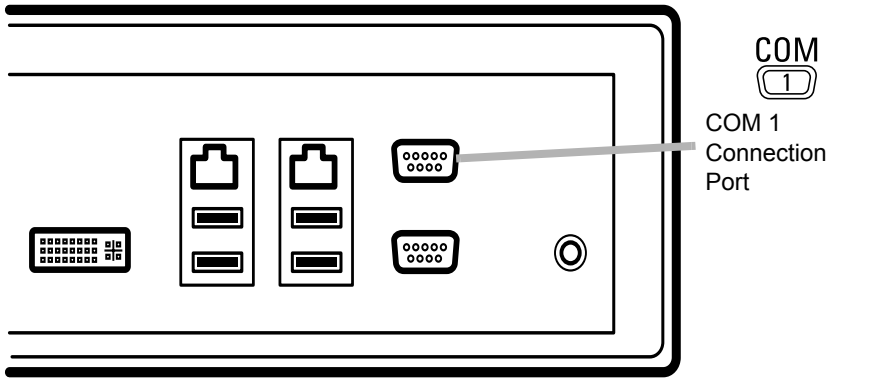
You should commit (save) the following configuration changes to the CIC Pro write filter:

- Dual display
- Touch screen display
- Printer installation

If a hard drive failure occurss, the CIC Pro does not save these uncommitted (unsaved) configuration changes. After the CIC Pro reboots, you must reconfigure these settings.

See "Commit Changes to the Write Filter" on page 3-57.

1. Plug the video cable for the touchscreen monitor into the primary video connection on the back of the CIC Pro, and configure the monitor settings according to "Connect/Configure the Video Display" on page 3-12.
2. If you have not already done so, complete "Calibrate the Screen" on page 3-32 and "Browser Configuration" on page 3-38.
3. Plug the data cable for the touchscreen monitor into the COM 1 connection port on the back of the CIC Pro.



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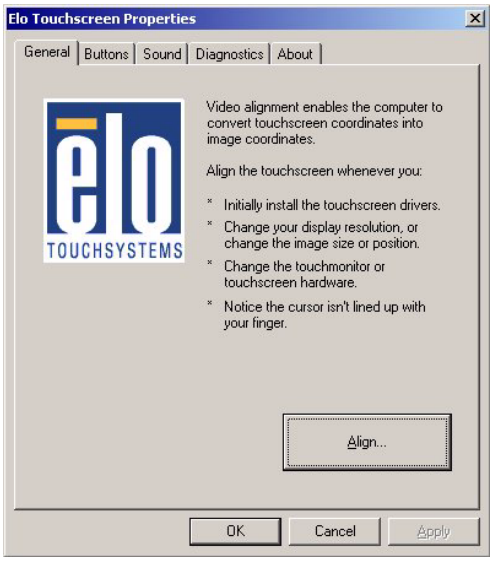
4. Stop the CIC Pro application, shut down the CIC Pro and log back in as "administrator" according to "Feedback Indicators" on page 2-31.
5. Select *Start* > *Settings* > *Control Panel*.
6. Double-click the *elo Touchscreen* icon.

7. If necessary, select the *General* tab in the *Elo Touchscreen Properties* window.



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8. Click *Align*.

9. As directed, touch the screen at the displayed target icons.

10. Touch/click *OK* to close the *Elo Touchscreen Properties* window.

11. Select *Start* > *Shut Down* > *Log off administrator*.

12. Restart the CIC Pro. It will start up in normal CIC Pro user mode.

13. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

CIC Pro System Configuration

Enhanced Write Filter

The write filter is used by the CIC Pro to prevent compact flash drive failure or data corruption. The write filter operates by strictly limiting the write/program operations occurring to the compact flash drive.

WARNING
LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

See "Commit Changes to the Write Filter" on page 3-57.

IP Address Configuration

WARNING
Duplicate IP addresses will cause erratic system communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

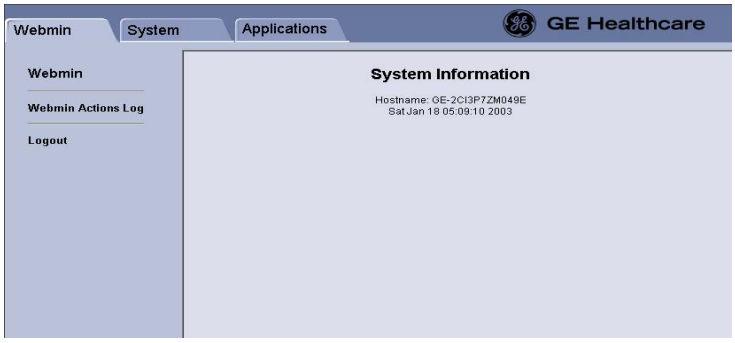
WARNING
LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

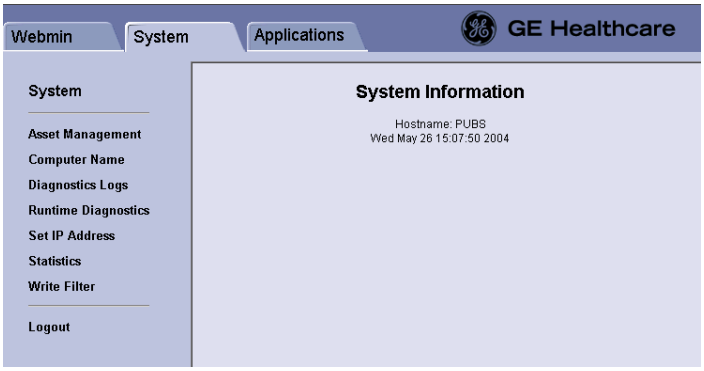
See "Commit Changes to the Write Filter" on page 3-57.

1. If the Internet Explorer browser is not already running: with the CIC Pro running, click the *Browse* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser.
2. Access the Webmin application according to "Local Webmin Access from the CIC Pro Computer" on page 2-17.
3. Log in to the Webmin application according to "Webmin Login" on page 2-18. The *Webmin* tab window displays.



013A

4. Click the *System* tab.



014A

5. Click the *Set IP Address* link at the left side of the *System* tab window. The *Set IP Address* window displays.

Set IP Address
Tue Aug 10 09:14:53 2004
Module Config
Computer: CIC_001074012
Tue Aug 10 09:14:53 2004
Unity MC
IP Address
Subnet Mask
Default Gateway
Unity IX
IP Address
Subnet Mask
Default Gateway
Check here to update the computer name using the last 9 digits of the MC ip address:
Check here to reset licensing based on the new computer name. This option is only available if you choose to update the computer name above. WARNING: All previous license configuration will be lost!
The new settings will not take effect until the computer is rebooted
Save
Reset Form

133A

WARNING
Duplicate IP addresses will cause erratic system communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

6. If the site uses a custom Unity Network MC network addressing scheme (ie not 126.x.x.x scheme), change the Unity Network MC network IP address so that it is unique on the network.

NOTE
Default IP address settings are recommended. Refer to the site survey for IP address values.

NOTE
Typically the *Unity MC Subnet Mask* setting should remain the default setting 255.0.0.0. See the site survey.

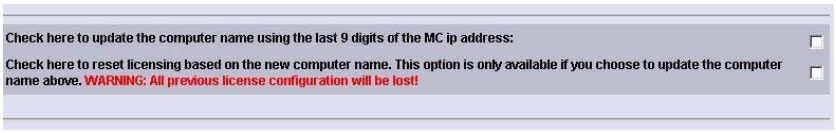
7. Enter the *Unity IX IP Address*, *Subnet Mask* and *Default Gateway* settings according to the site survey.

NOTE
Typically the *Unity IX Subnet Mask* setting should remain 255.255.255.0. See the site survey.

NOTE
It is necessary to open the Unity IX IP address to the internet before the browser can access internet web addresses (external to the hospital network). Contact your hospital IT Administrator.

8. If the Unity Network IX network IP address/subnet mask has been changed, replace the label on the CIC Pro cover with a new label displaying the IP address/subnet mask value(s).

9. If desired, select the checkbox to update the CIC Pro computer name using the last 9 digits of the Unity Network MC network IP address.


Check here to update the computer name using the last 9 digits of the MC ip address:
Check here to reset licensing based on the new computer name. This option is only available if you choose to update the computer name above. WARNING: All previous license configuration will be lost!

140A

CAUTION
LOSS OF DATA — Select the license reset feature only if you are certain you want to delete the existing license. Previous license file configuration is lost if this feature is enabled.

10. If desired, select the checkbox to reset the license so it is based on the IP address (enabled only if the other checkbox selected).
11. Click *Save*.
12. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.
13. Select the *Start > Shut Down*
14. From the *Shut Down Windows* dialog, select *Restart.* Click *OK*.

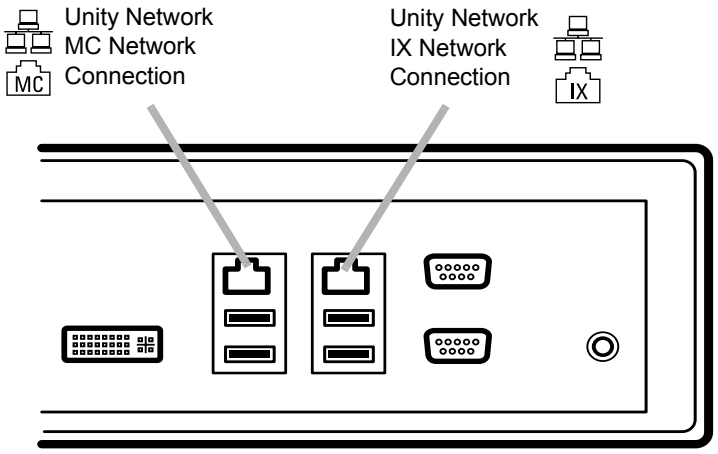
NOTE
You must restart the CIC Pro for the new IP Address settings to take effect.

Connect to Unity Networks

CAUTION
Perform "IP Address Configuration" on page 3-19 before connecting to the Unity networks.

Do not adjust time/date settings while connected to the network. Changes to the time/date data affects all units on the network. This can result in other monitors altering the time and date parameter of some patient data.

Connect the Unity Network MC and IX network drop cables to the back of the CIC Pro as indicated in the following figure.



090A

Computer Name Configuration

WARNING

LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

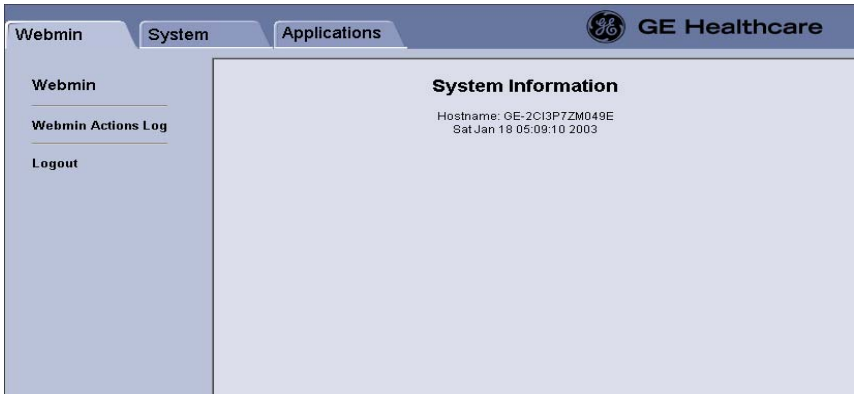
- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

See "Commit Changes to the Write Filter" on page 3-57.

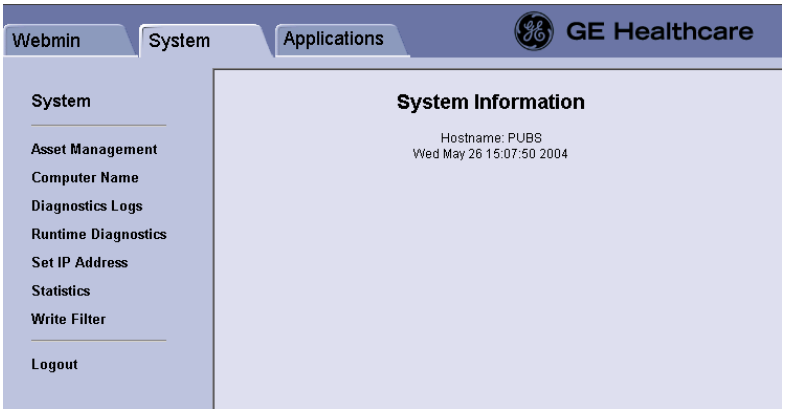
1. If the Internet Explorer browser is not already running: with the CIC Pro running, click the *Browse* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser.
2. Access the Webmin application according to "Local Webmin Access from the CIC Pro Computer" on page 2-17.

3. Log in to the Webmin application according to "Webmin Login" on page 2-18. The *Webmin* tab window displays.



013A

4. Click the *System* tab.

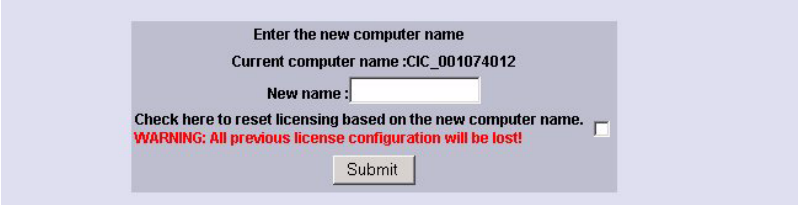


014A

5. Click the *Computer Name* link at the left side of the *System* tab window.
6. Type a computer name for the CIC Pro into the *New name* field.

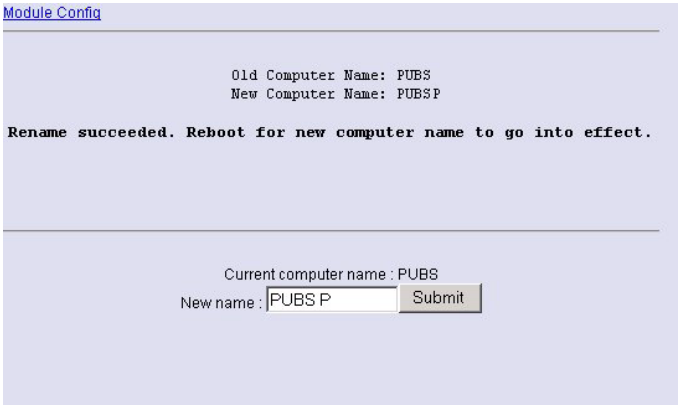
CAUTION
LOSS OF DATA — Select the license reset feature only if you are certain you want to delete the existing license. Previous license file configuration is lost if this feature is enabled.

7. If desired, select the checkbox to reset the license so it is based on the new computer name.


Enter the new computer name
Current computer name :CIC_001074012
New name :
Check here to reset licensing based on the new computer name.
WARNING: All previous license configuration will be lost!
Submit

126A

8. Click *Submit*.


Module Config
Old Computer Name: PUBS
New Computer Name: PUBSP
Rename succeeded. Reboot for new computer name to go into effect.
Current computer name : PUBS
New name : PUBS P
Submit

127A

9. Select the *Start > Shut Down.*
10. From the *Shut Down Windows* dialog, select *Restart.* Click *OK*.

NOTE

You must restart the CIC Pro for the new computer name setting to take effect.

11. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.
12. Replace the label on the CIC Pro cover with a new label displaying the new Computer Name.

Printer Installation

NOTE

You should commit (save) the following configuration changes to the CIC Pro write filter:

- Dual display
- Touch screen display
- Printer installation

If a hard drive failure occurs, the CIC Pro does not save these uncommitted (unsaved) configuration changes. After the CIC Pro reboots, you must reconfigure these settings.

See "Commit Changes to the Write Filter" on page 3-57.

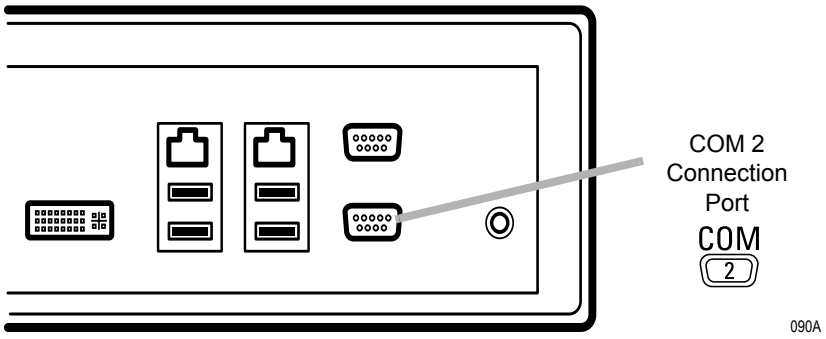
Digital Writer Printer Connection

NOTE

A DDW cannot be used for the following (Use a laser printer instead. See "Network Laser Printer Installation/Deletion" on page 3-26):

- to print from the *Graphic Trends* or *Alarm Histories* tabs if "PDS" is selected for those tabs.
- to print Full disclosure and Flow Volume Loop information.

1. Connect the PRN 50 or PRN 50-m to the **COM 2** port on the back of the CIC Pro. Connect an AC power cord from the power receptacle on the PRN 50 or PRN 50-M to a power outlet.



NOTE

The PRN 50 or PRN 50-M must use software V2B or later to operate properly with the CIC Pro and telemetry systems.

2. Load the printer with paper.
3. In *CIC Setup*, on the *CIC Defaults* tab, select *COM2* from the *DDW* selection list. See "Printer/Writer Selections" on page 3-34.

Network Laser Printer Installation/Deletion

NOTE

The following installation procedure requires a Unity Network IX network connection. See "You must restart the CIC Pro for the new IP Address settings to take effect." on page 3-22.

NOTE

The following only applies when the printer TCP/IP scheme follows Unity Network IX network IP addressing factory defaults (192.168.x.x), and the printer is physically located on the Unity Network IX network. When the printer uses a custom TCP/IP addressing scheme, refer to the site survey for resolving TCP/IP values.

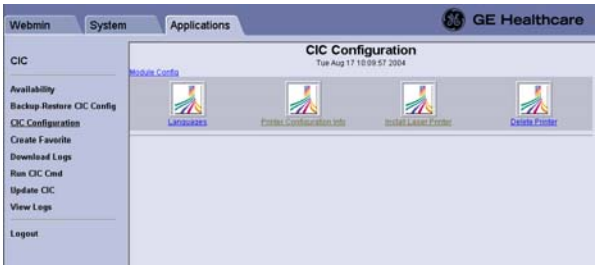
1. If necessary, shut down the CIC Pro application and log on using a full-access logon according to "System Logons" on page 2-15.
2. Ensure the printer is on.
3. Using the Internet Explorer application, click the *Browse* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser.

4. Access the Webmin application according to "Local Webmin Access from the CIC Pro Computer" on page 2-17.
5. Log in to the Webmin application according to "Webmin Login" on page 2-18. The *Webmin* tab window displays.
6. Click the *Applications* tab.
7. Click the *CIC Configuration* link at the left side of the *Applications* tab window.

015A

Laser Printer Installation

a. Click *Install Laser Printer.*



028A

b. Type the IP address assigned to the printer (e.g. *192.168.x.x*) into the *Printer's IP Address* field.

NOTE

If the addressing scheme has been changed from factory defaults, the assigned addresses must be tracked and maintained at the site. This includes printers. The above scheme only applies when the Unity Network IX network IP addressing has not changed from the factory defaults and/or the printer is not connected to your hospital's network.

c. Select the printer type from the Printer Type pull-down menu. Supported HP LaserJet printers include: *4100 Series PS, 4300 PS, 4050 Series PS, 4200 PS and 4000 Series PS*.

d. If desired, enter a name for the printer into the *Printer Name* field (29 characters max.).

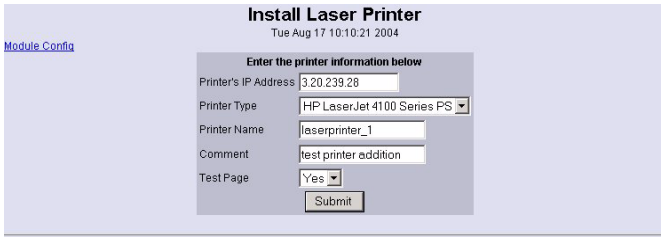
NOTE

If a printer name isn't specified, the printer type will be used as the printer's name.

e. If desired, enter a comment about the printer into the *Comment* field. (29 characters max.).

f. Select *Yes* or *No* from the *Test Page* pull-down menu for printing a test page as part of the printer installation (recommended).

g. Click *Submit*.



134A

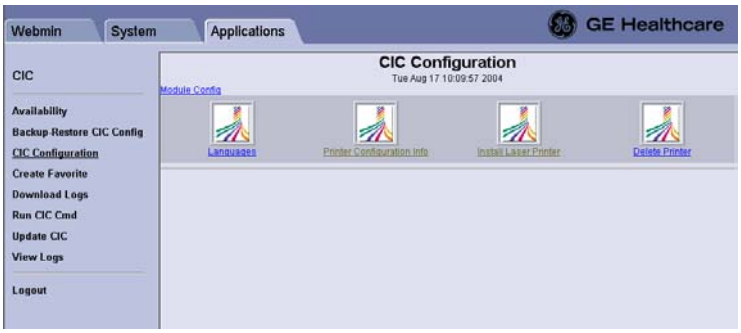
h. The results of the printer installation operation display. If the printer was successfully installed, it will be displayed in the printer list.

135A

i. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

Delete Laser Printer

a. Click *Delete Printer.*



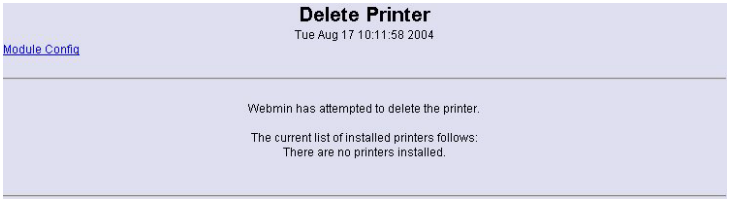
028A

b. Select the printer you want to delete from the *Printer Name* pull-down menu in the *Select the printer to delete* section of the window.

c. Click *Submit*.

136A

d. The results of the printer delete operation display. If the printer was successfully deleted, it will be removed from the printer list.


Delete Printer
Tue Aug 17 10:11:58 2004
Module Config
Webmin has attempted to delete the printer.
The current list of installed printers follows:
There are no printers installed.

137A

e. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

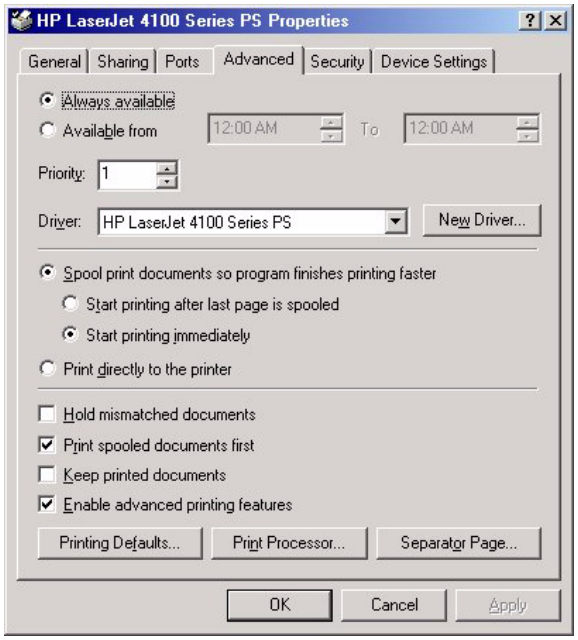
Setting Default Paper Size

CIC Pro default paper size can be configured.

NOTE

Default paper size is set to 8 x 11 inches (letter) during manufacturing.

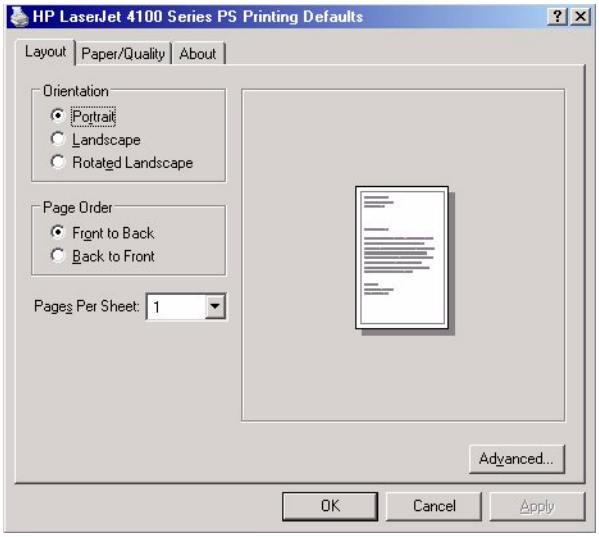
1. If necessary, shut down the CIC Pro application and log on using a full-access logon according to "System Logons" on page 2-15
2. Select *Start* > *Settings* > *Printers and Faxes*.
3. Right-click the printer you want to configure.
4. Select *Properties*.
5. Click the *Advanced* tab.



138A

6. Click *Printing Defaults*.

7. Click *Advanced*.

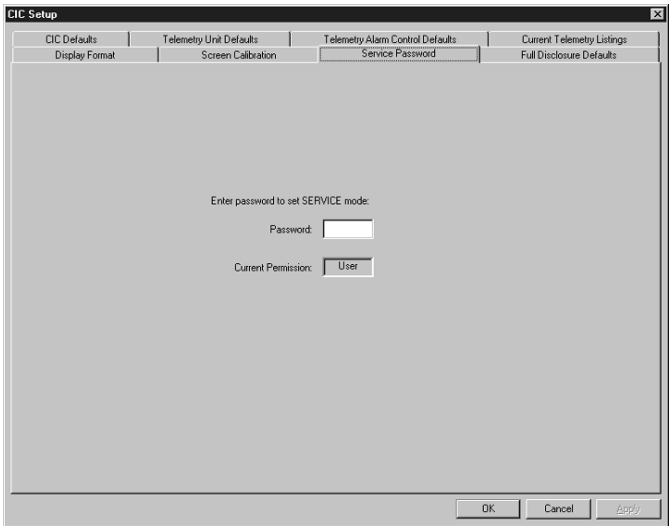


139A

8. Select default paper size (*Paper Size*).
9. Click *OK* (*Advanced Options*).
10. Click *OK* (*Printing Defaults*).
11. Click *OK* (*Properties*).
12. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

CIC Pro Application Configuration

Access Service Mode



WARNING

The service mode is intended for use only by qualified personnel with training and experience in its use. The consequences of misuse include loss of alarm configuration, loss of patient data, corruption of the CIC Pro operating system software, or disruption of the entire network.

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. When prompted for the service password, type **mms_cic** and press **Enter**.

NOTE

When you are in service mode, a cross-shaped (+) cursor replaces the normal arrow cursor.

Calibrate the Screen

CAUTION

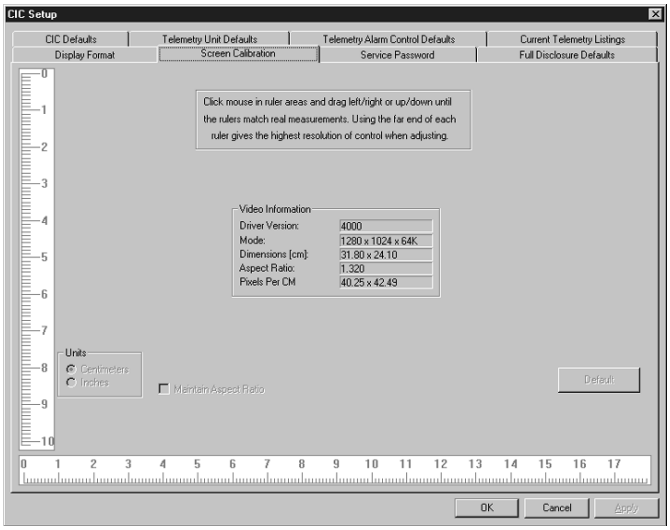
When using a video splitter with the CIC Pro, screen calibration may be possible with only one of the monitors connected to the splitter. This is because changing calibration for one monitor will effect the calibration of all other monitors connected to that same splitter.

When using monitors connected to a splitter, only the last monitor calibrated will have proper calibration. Manual measurements should be made from that monitor only.

NOTE

A flexible clear plastic ruler calibrated in inches and centimeters is recommended for this procedure.

1. Click the *Screen Calibration* tab. The *Screen Calibration* window displays.



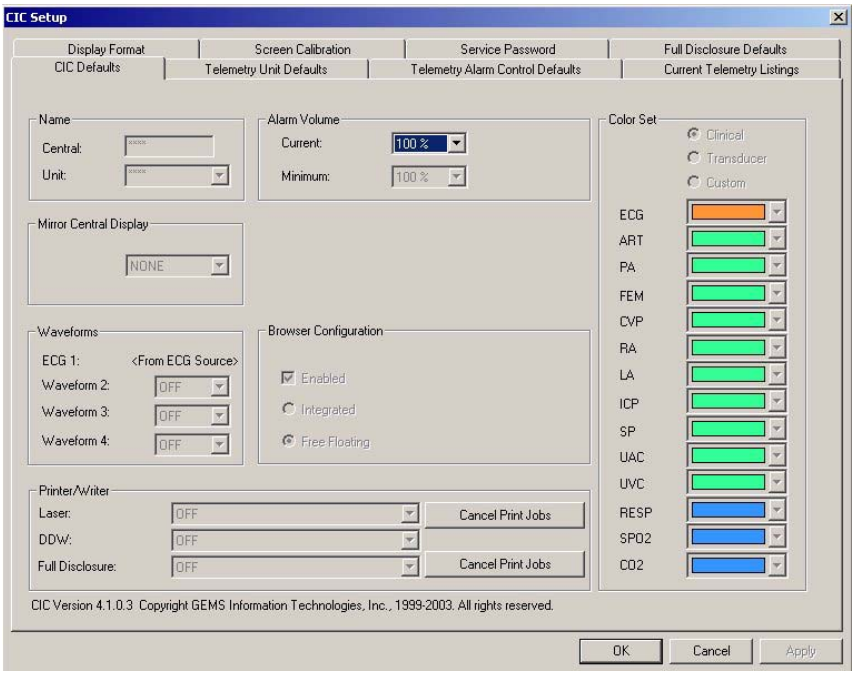
2. The illustration shows the *Screen Calibration* screen. In the *Units* box, use the mouse to choose *Inches* or *Centimeters,* as desired.
3. Click the *Default* button to set the display to the default resolution.
4. Hold your ruler horizontally on the computer screen, aligning the zero mark of your ruler with the horizontal zero mark of the screen ruler.
5. Position the arrow cursor on the screen ruler. Hold down the left mouse button while you drag (or pull) the screen ruler as required until the calibration marks of the screen ruler match the calibration marks of your ruler, then release the mouse button.
6. Repeat this procedure to calibrate the vertical screen ruler.
7. When you finish, click *Apply* at the lower right corner of the calibration screen to save the calibration settings.

NOTE

The *Maintain Aspect Ratio* button on the calibration screen allows you to adjust both screen rulers simultaneously. However, because of differences in monitors and screen resolution, it is recommended that each ruler be adjusted separately. (A check mark in the box indicates when this option is selected. Click on the check box to deselect it.)

Set the CIC Pro Defaults

Open the *CIC Defaults* Screen



Click on the *CIC Defaults* tab to open the *CIC Defaults* screen shown.

Set the Central Name

NOTE

All other systems on the GE Medical Systems *Information Technologies*' Unity Network MC network use the *Central* name to identify this CIC Pro system. The central name should be relevant to the location, such as CS-2 or SDU3.

Make sure no other central stations have the same central name.

Press **Tab** to enter the *Name* fields. The maximum length of the central name is four characters.

Click the text cursor in the *Central* field.

Type the *Central* name. When finished, click *Apply* at the lower right corner of the screen to save the setting.

Set the Unit Name

NOTE

All other systems on the Unity Network MC network use the care *Unit* name to identify this CIC Pro system. The care unit name should be relevant to the location, such as CCU or ICU-1.

It is very important to enter the correct care unit name. Be especially careful of the name's spelling.

If any other CIC Pro systems are intended to have the same care unit name, make sure the names match exactly.

CAUTION

Once the care unit name is programmed, and the CIC Pro system is placed in use, avoid changing the care unit name. Changing the care unit name deletes all Full Disclosure data and the list of transmitters stored on the CIC Pro. You must re-enter that data after you change the care unit name.

Click on the arrowhead next to the *Unit* name box to open the pull-down list of unit names. Click to select the desired name, or type a name into the *Unit* name box and press **Enter**.

NOTE

If the care unit name is not listed in the pull-down list, you must type it in. The name cannot exceed 7 characters.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Set the Waveform Parameters

Select the waveforms you wish to display (up to three in addition to the ECG).

- *Graph Waveform ECG 1:* Default from *ECG Source*.
- *Graph Waveform 2 – 4:*Allows you to enable/disable graphing for subsequent ECG leads. Choices are *Off, I, II, III, V, aVR, aVL,* and *aVF*.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Printer/Writer Selections

NOTE

A DDW cannot be used for the following. Use a laser printer instead:

- if the CIC Pro is used with Unity PDS.
- to print Full disclosure and Flow Volume Loop information.

Full disclosure reports can potentially be very large and take a very long time to print. This can block alarm graphs sent to that printer. Because of this, the print setup for full disclosure reports may be different from other patient printing.

It is important to note that the printer selection list for full disclosure is different from the printer selection list for graphing patient data. The following printer list may not include printers defined on the GE Unity Network IX network.

Laser: – Select your network or installed parallel laser printer from the drop down list.

DDW: – If a Digital Data Writer is connected to the CIC Pro **COM2** port, select *COM2* from the drop-down list.

Full Disclosure: – Select your network.

Click *Apply* to save the new settings.

Setup a Mirrored CIC Pro

The *Mirror Central Display* option allows double-monitoring of patients from remote, or secondary CIC Pros. The display on the remote CIC Pro is configured to mirror the originating CIC Pro (i.e. the same patients are shown in the same display slots).

If the remote CIC Pro is located in the same care unit as the originating CIC Pro, it can be used to perform the *Admit/Discharge*, or any other display-type operation(s). The changes affect both CIC Pros. For example, if the patient in a display slot is changed at one CIC Pro, the change is also automatically performed on the mirroring CIC Pro.

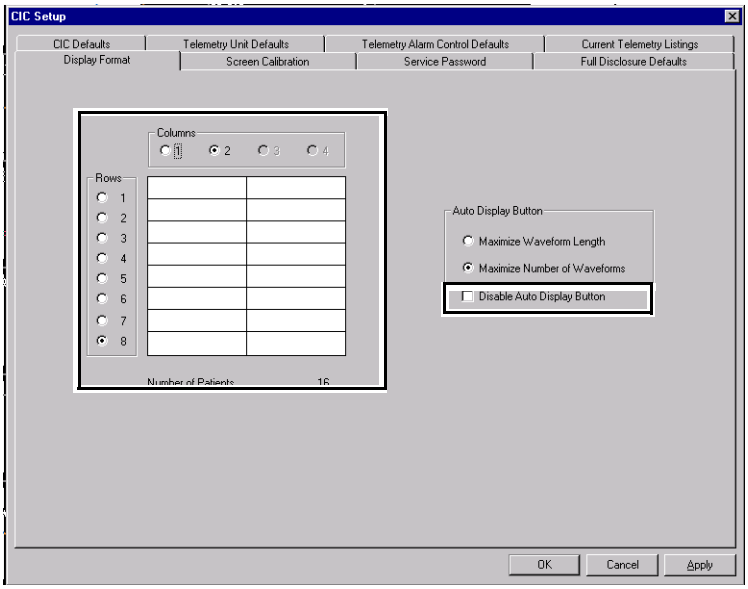
CAUTION
Use caution when configuring mirror CIC Pro displays. Since changes at one CIC Pro can affect the other display, there may be an inadvertent loss of patient monitoring at the primary CIC Pro.

You can set up a mirrored CIC Pro for remote monitoring. This is set in the service mode. Changes made on one CIC Pro are NOT always made at the other CIC Pro. The main and mirrored CIC Pro share bed lists. When a mirrored CIC Pro is set up, these rules are in place:

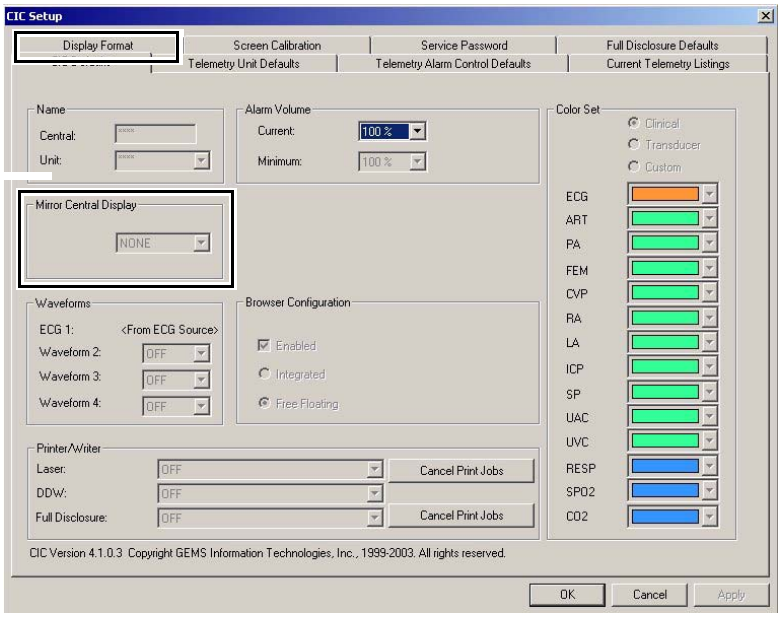
- If the user selects new parameters or colors to view on one display, that view is NOT “mirrored” on the other display.
- *Auto Display* is disabled at the mirrored CIC Pro. However, it is still active on the main CIC Pro. You must select *Disable Auto Display* on the *Display Format* tab of the main CIC Pro.
- When using the mirror feature, configure both the main and mirrored CIC Pro to the same *Display Format* tab settings. Whenever these settings are changed on one CIC Pro, they are NOT reflected on the other.
- The title bar of the mirror CIC Pro displays *mirror of [CIC SELECTED]*.

To set up a mirrored CIC Pro:

1. At the remote CIC Pro (mirroring the main CIC Pro), click on *Setup CIC*.
2. *Auto Display* is disabled on the remote CIC Pro. However, it is still active on the main CIC Pro. Select the *Display Format* tab and then click the *Disable Auto Display* button.



3. Configure both the main and remote CIC Pro to the same *Display Format* tab settings for the mirror feature to work correctly. Set the *Columns* and *Rows* in the *Display Format* tab of the remote CIC Pro to match the main CIC Pro.
4. Select the *CIC Defaults* tab.
5. At *Mirror Central Display* there is a drop-down box. All CIC Pros on the network are listed in this box. Select the main CIC Pro you want mirrored on the remote CIC Pro.



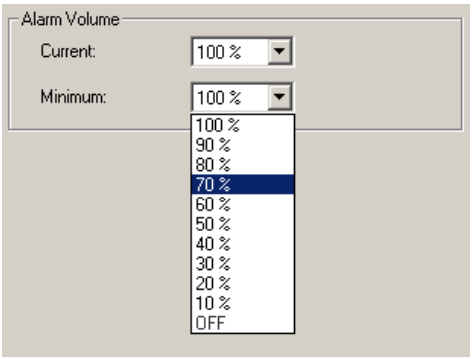
6. Check the title bar on the remote CIC Pro to assure that it is mirroring the correct CIC Pro.
7. When complete, click *Apply* at the lower right corner of the screen to save the new settings.

Set the Alarm Volume

This box allows you to set the alarm volume for the CIC Pro. The minimum alarm volume is set in service mode. Actual alarm volumes can be set to any level above this minimum while either in user or service mode.

To adjust the minimum alarm volume:

1. If not already in service mode, enter service mode according to "Access Service Mode" on page 3-31.
2. Click the *Minimum* drop-down menu in the *Alarm Volume* control area. The *Alarm Volume* drop down menu opens.



3. Click on the desired minimum volume level. The minimum volume can be set between *OFF* and *100%* in the user mode.
4. Values above the *Minimum* volume setting can be selected from the *Current* drop-down menu while either in service or user mode. The value selected in the *Current* list determines the actual alarm volume

Adjust the Color Set

This option allows you to set a color scheme for waveforms. Preset choices are *Clinical, Transducer,* or *Custom.* You must be in the service mode to make modifications to the color set. See "Access Service Mode" on page 3-31.

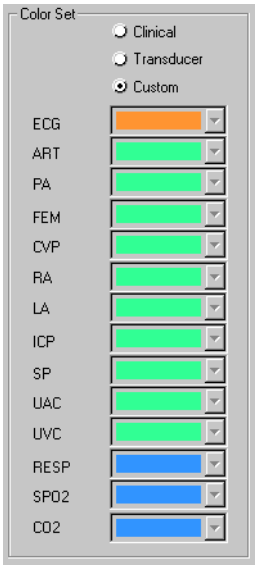
- *Clinical*—This sets the colors for single-parameter or double-parameter patient monitoring. *ECG* waveforms display in orange; *ART, PA, FEM, CVP, RA, LA, ICP, SP, UAC*, and *UVC* display in green; and *RESP, SPO2*, and *CO2* display in blue.
- *Transducer*—This sets the colors for multi-parameter patient monitoring. Display colors are: *ECG* in brown, *ART* in red, *PA* in yellow, *FEM* in red, *CVP* and *RA* in blue, *LA* and *ICP* in white, *SP* in green, *UAC* in red, *UVC* in blue, *RESP* and *SPO2* in green, and *CO2* in white.
- *Custom*—This selection allows you to set each waveform color individually.

NOTE

When you select *Custom*, you can select colors for each of the fourteen waveform types individually.

When you select either *Clinical* or *Transducer*, access to the color palettes for individual waveforms is disabled.

To access and change the *Color Set*:



1. Click on the arrow next to the waveform name box to open the pull-down list of colors.
2. Click on the desired color to select it.
3. When color selections are complete, click *Apply* at the lower right corner of the screen to save the new color settings.

Browser Configuration

This control allows you to disable/enable and configure the web browser. When enabled, the *Browser Configuration* control includes the following possibilities.

- Single Monitor—Browser is *Integrated* into Single Patient Viewer,
- Single Monitor—Browser is *Free Floating,*
- Dual Monitor—Browser displays on second monitor.

You must be in the service mode to make modifications to browser configuration. See "Access Service Mode" on page 3-31.

NOTE

The browser interface differs slightly depending upon the selected mode:

Free Floating option — Displays text menus; favorites list displays in left frame.

Integrated option — Displays icons instead of menus; favorites list displays in right frame. See "Integrated Internet Explorer Browser Interface" on page 2-22.

To exit the web browser, select the *Close* button.

Browser Setup

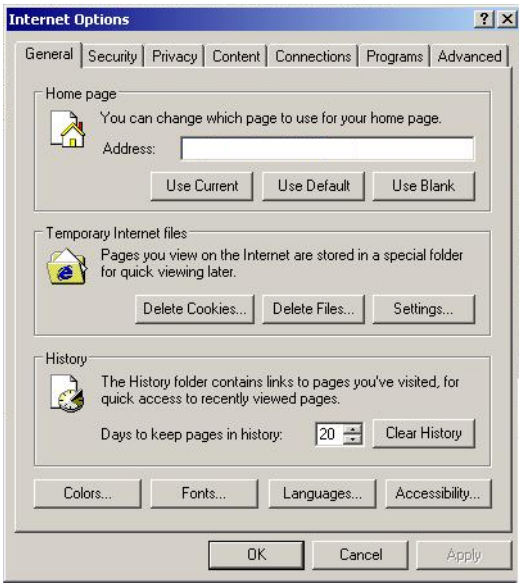
WARNING

LOSS OF MONITORING — If the browser function is inappropriately used, loss of monitoring function may result. Use alternate monitoring devices or close patient observation until the monitoring function at the CIC Pro is restored.

When using the browser, follow these restrictions:

- Do NOT attempt to access the file systems of the CIC Pro through the use of the browser.
- Do NOT attempt to download files of any type. This includes, but is not limited to, audio or video files.

1. If not already in service mode, enter service mode according to "Access Service Mode" on page 3-31.
2. Click the *Enable* checkbox in the *Browser Configuration* control area. Select the *Free Floating* radio button.
3. With the CIC Pro running, click the *Browse* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser. Select *Tools* > *Internet Options*. The *Internet Options* window appears.



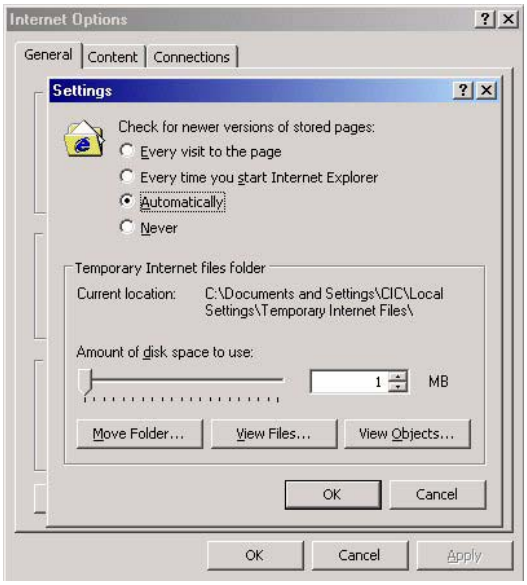
4. In the *Address* field, in the *Home Page* section enter the internet address you want for your browser home page, or select *Use Blank*. Click *OK*.

   NOTE

   When Internet Explorer starts, the browser displays the specified *Home Page*.

5. Click *Settings* in the *Temporary Internet files* control.

6. Ensure the *Temporary Internet files folder* disk space does not exceed 1 MB and click *OK*.



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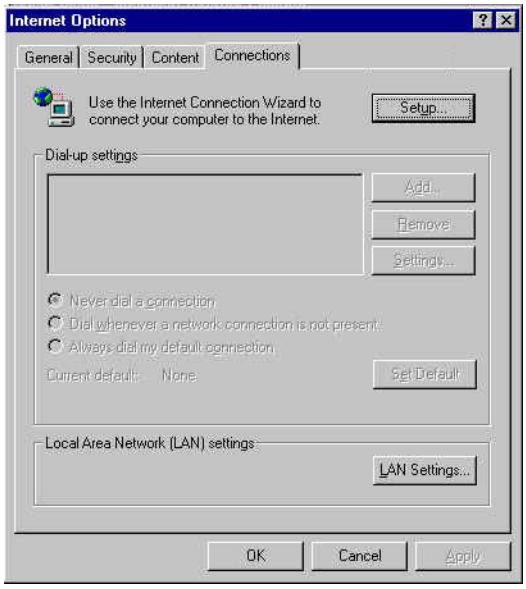
7. If you use *Automatic configuration* or a *Proxy server*, then select the *Connections* tab and click *LAN Settings...*

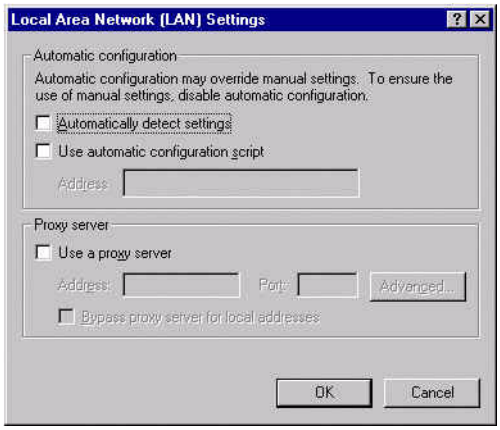


8. Enter the *Automatic configuration* script or *Proxy server* address and port according to the hospital IT Administrator. Click *OK*

NOTE

Before the browser can access internet web addresses (external to the hospital network), a connection for the Unity Network IX network to the

internet is required. Contact the hospital IT Administrator.

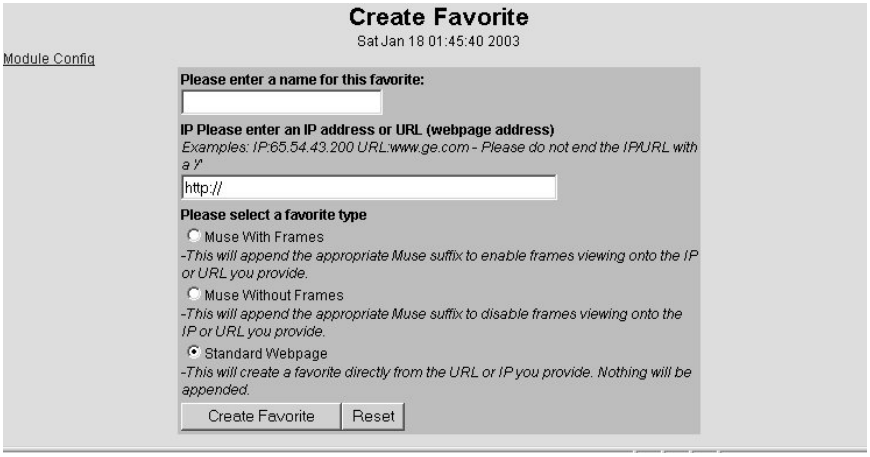


9. Proceed to "IP Address Configuration" on page 3-19.

Create Webmin Favorite

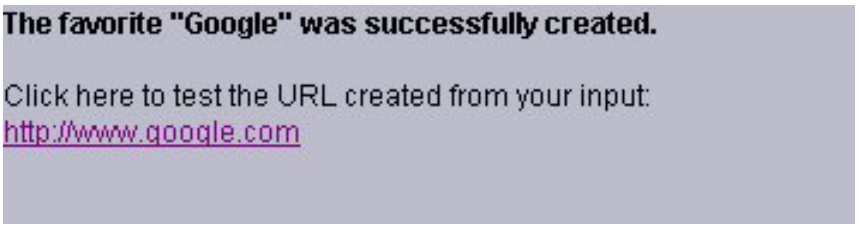
The *Create Webmin Favorite* feature is useful for adding favorites to the CIC Pro browser. It is a simpler, alternative method to the procedure described in "MUSE Web Frame/No Frame Connection Errors" on page 5-12.

1. If the Internet Explorer browser is not already running: with the CIC Pro running, click the Browse button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser.
2. Access the Webmin application according to "Local Webmin Access from the CIC Pro Computer" on page 2-17.
3. Log in to the Webmin application according to "Webmin Login" on page 2-18.
4. Click the *Applications* tab.
5. Click the *Create Favorite* link to display the following window.


Create Favorite
Sat Jan 18 01:45:40 2003
Module Config
Please enter a name for this favorite:
IP Please enter an IP address or URL (webpage address)
Examples: IP:65.54.43.200 URL:www.ge.com - Please do not end the IP/URL with a '/'
http://
Please select a favorite type
Muse With Frames
-This will append the appropriate Muse suffix to enable frames viewing onto the IP or URL you provide.
Muse Without Frames
-This will append the appropriate Muse suffix to disable frames viewing onto the IP or URL you provide.
Standard Webpage
-This will create a favorite directly from the URL or IP you provide. Nothing will be appended.
Create Favorite
Reset

6. Type a name into the *Please enter a name for this favorite* field. The name will identify the favorite in the browsers *Favorites* menu.

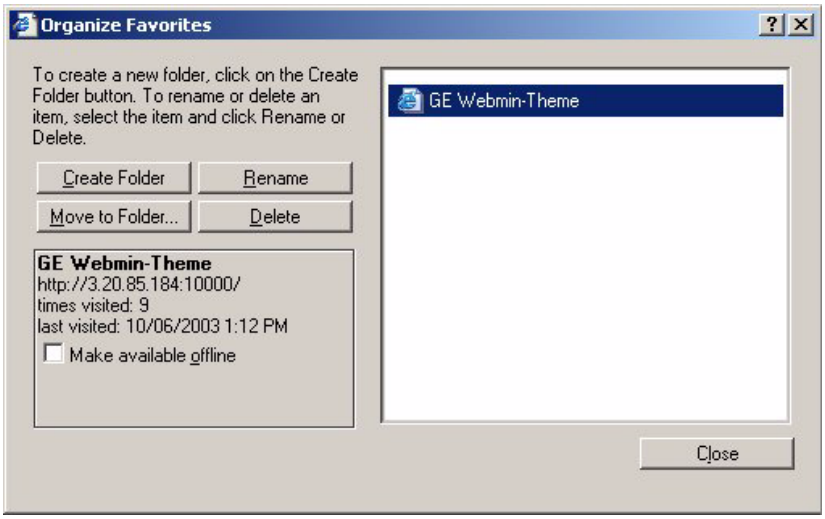
7. Type the internet address or IP address into the *Please enter an IP address or URL (webpage address)* field.
8. Click to select a radio button associated with the link for the favorite.
9. If necessary, click *Reset Form* to clear the fields and selections on the page.
10. Click *Create Favorite*.



11. Click the link to test the URL for the new favorite.

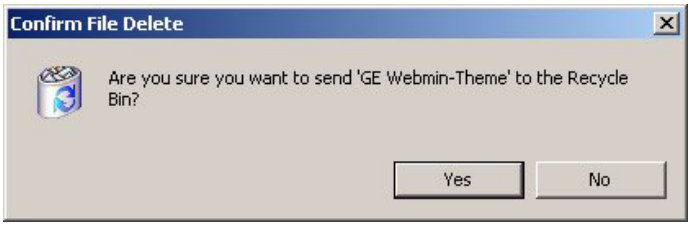
Delete Favorites

1. If not already in service mode, enter service mode according to "Access Service Mode" on page 3-31.
2. Click the *Enable* checkbox in the *Browser Configuration* control area. Select the *Free Floating* radio button.
3. With the CIC Pro running, click the *Browse* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser. Select *Organize Favorites.* The *Organize Favorites* window displays.



4. Select the favorite you want to delete from the list of favorites.

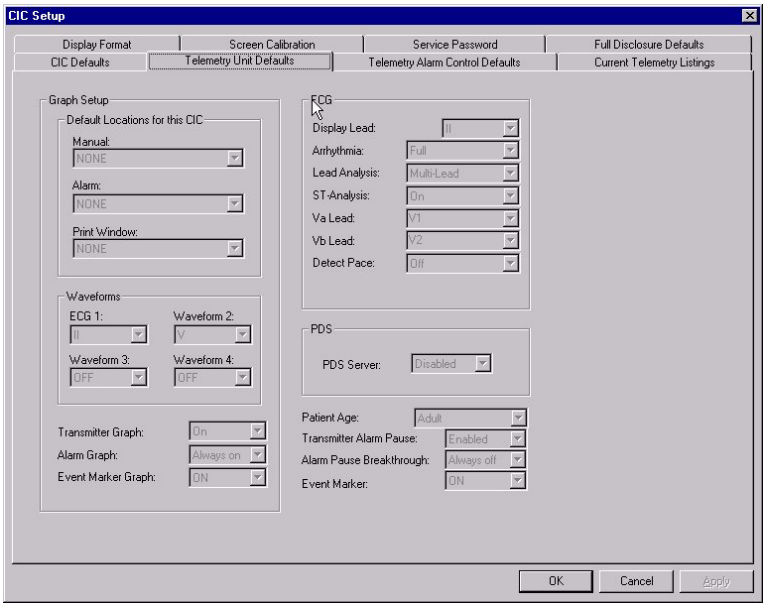
5. Click *Delete*.



6. Click *Yes* in the *Confirm File Delete* window to delete the selected favorite.

Set the Telemetry Unit Defaults

Open the Telemetry Unit Defaults Screen



Click on the *Telemetry Unit Defaults* tab as shown.

This option allows you access to the telemetry default settings. In user mode, all of the controls on the *Telemetry Unit Defaults* tab sheet are view-only. You must be in the service mode to review and make modifications to the *Telemetry Unit Defaults* tab sheet at the CIC Pro.

NOTE

For more information on setting Telemetry Unit Defaults, refer to the telemetry system's operator manual.

Graph Setup

NOTE

When changing the graph setup for admitted patients, the changes will not take effect until the patients are discharged or the settings are changed in the *Graph Setup* settings for each patient.

Locations – The *Default locations for this CIC* are only used for telemetry beds. These defaults determine where patient data prints for either manual or alarm

conditions. Since a telemetry patient is not linked to a monitor, such as a Solar 8000 monitor, these defaults are necessary to specify the destination for alarm and manual graph printouts.

The *Location* options are:

- *Manual Graph Location* —allows you to designate the default manual graph location for telemetry patients.
- *Alarm Graph Location* —allows you to designate the default alarm graph location for telemetry patients.
- *Print Window Location* —allows you to designate the default print window location for telemetry patients.

Waveform – Under the Graph Setup Waveform option you can designate the primary ECG lead for printing and enable/disable graphing for subsequent ECG leads.

The *Waveform* options are:

- *Graph Waveform ECG 1:*—allows you to designate the primary ECG lead for printing.
- *Graph Waveform 2 – 4*—allow you to enable/disable graphing for subsequent ECG leads. Choices are *Off, I, II, III, V, aVR, aVL,* and *aVF*.

Transmitter Graph – This option allows you to turn on/off transmitter graph printing.

Alarm Graph On/Off – This option allows you to turn on/off alarm graph printing.

Event Marker Graph On/Off – This option allows you to turn on/off event marker graph printing.

ECG

Display Lead – This option allows you to set the primary ECG lead for display in the patient's waveform window. Choices are I, II, III, V, aVR, aVL, and aVF.

Arrhythmia – This option allows you to enable/disable an arrhythmia analysis program. Choices are *Full*, *Lethal*, and *Off*.

Lead Analysis – This option allows you to designate Single-Lead or Multi-Lead analysis for ECG and arrhythmia analysis.

ST Analysis – This option allows you to enable/disable ST analysis. Choices are *On* or *Off*.

Va Lead/Vb Lead – This option allows you to set the default for the V leads that will be monitored in these positions. A 6-lead cable is required for multiple V-lead monitoring. Choices for Va are V1, V2, V3, V4, V5, and V6. Choices for Vb are V2, V3, V4, V5, and V6.

Detect Pace – This option allows you to enable/disable pacer detection. Choices are *Pace 1, Pace 2,* and *Off*.

PDS

This option allows you to enable/disable use of the Patient Data Server (PDS).

The PDS is a rack-mounted server that collects graphic trend and alarm history data from data acquisition devices on the Unity Network MC network. Data may be collected from both hard wired and wireless devices and returns the data to a CIC Pro for viewing. This data is stored in the PDS for 72 hours, providing temporary patient data history. Additionally, the data is stored under a patient's PID so that as the patient is moved from one data acquisition device or care unit to another, the new data is appended to the patient's record, creating one continuous 72-hour string of data.

Patient Age, Transmitter Alarm Pause and Alarm Pause Breakthrough

Patient Age – This option allows you to set patient age. Choices are *0–2 Years*, *3–11 Years*, *11–13 Years*, and *Adult*.

Transmitter Alarm Pause – This option allows you to turn on/off transmitter alarm pausing. Choices are *Enabled*, *Disabled*, and *Off*.

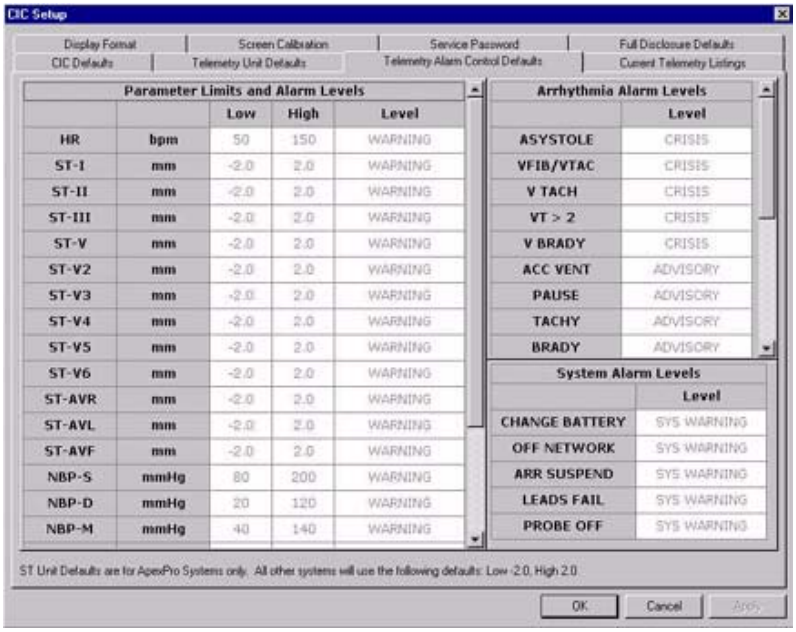
Alarm Pause Breakthrough – This option allows you to turn on/off transmitter pause breakthrough. Choices are *Always on* and *Always off*.

When finished, click *Apply* at the lower right corner of the screen to save the settings.

Event Marker – This option allows you to turn on/off event marker alert.

Set the Telemetry Alarm Control Defaults

Open the Telemetry Alarm Control Defaults Screen



Click on the *Telemetry Alarm Control Defaults* tab as shown.

In user mode, all of the controls on the *Telemetry Alarm Control Defaults* tab sheet are view-only. You must be in the service mode to set default limits and alarm settings for telemetry patients.

NOTE

For more information on setting Telemetry Alarm Control Defaults, refer to the telemetry system's operator manual.

Parameter Limits and Alarm Levels

This option allows you to set default parameter alarms limits and alarm levels for the following parameters: HR, NBP-S, NBP-D, NBP-M, SPO2, SPO2-R, ST-I, ST-II, ST-III, ST-V, ST-V2, ST-V3, ST-V4, ST-V5, ST-V6, ST-aVR, ST-aVL, ST-aVF, and PVC**.**

Arrhythmia Alarm Levels

This option allows you to set default alarm levels for the following arrhythmia calls: ASYSTOLE, VFIB/VTAC, V TACH, V BRADY, VT>2, ACC VENT, PAUSE, TACHY, BRADY, R ON T, COUPLET, BIGEMINY, TRIGEMINY, PVC, IRREGULAR and ATRIAL FIB.

NOTE

The default alarm levels for ASYSTOLE and VFIB/VTACH cannot be moved from the Crisis level.

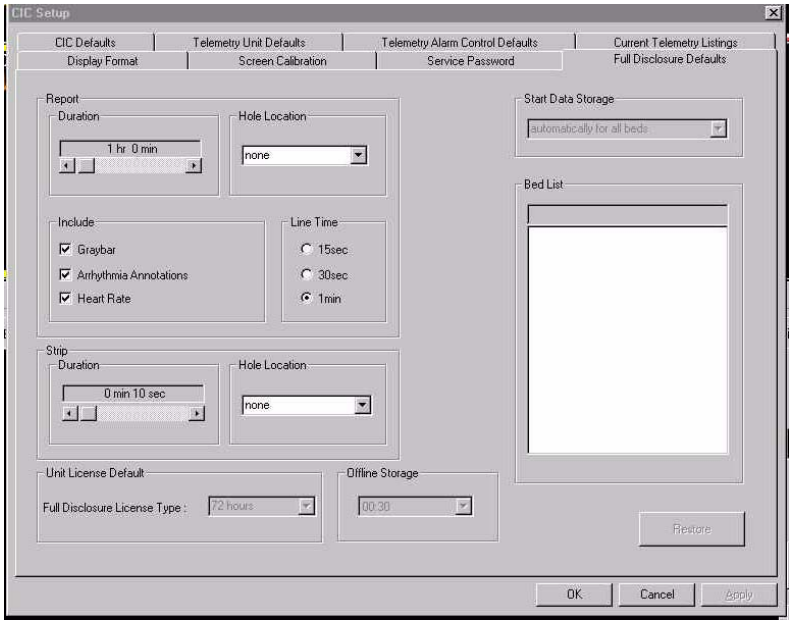
System Alarm Levels

This option allows you to set default alarm levels for the following system alarms: CHANGE BATTERY, OFF NETWORK, ARR SUSPEND, LEADS FAIL, PROBE OFF.

When finished, click *Apply* at the lower right corner of the screen to save the Telemetry Alarm Control Defaults setting.

Set the Full Disclosure Defaults

Open the Full Disclosure Defaults Screen



Click on the *Full Disclosure Defaults* tab as shown.

Report Duration

This option allows you to designate how much data is included in the report. The maximum report duration is 72 hours, depending upon licensing.

To set the report duration, place the cursor on the scroll bar below the *Report Duration* display field. Move the scroll bar to the left for shorter duration or to the right for longer duration.

Report Hole Location

This option allows space for binding printed reports. Options are *none, top, bottom, left,* and *right.*

Report Include

This option allows you to enable print characteristics. Options include *Graybar, Arrhythmia Annotations,* and *Heart Rate.* You may select all or none of these options.

- In *Graybar*, every other line of the report appears on a shaded background to provide visual differentiation from other lines.
- In *Arrhythmia Annotations*, the name of an applicable arrhythmia call appears underneath its occurrence in the report.
- In *Heart Rate*, the last active heart rate included in the report appears at the end of the report line.

Report Line Time

This option allows you to designate how much data shows on an individual report line. Choices are *15sec, 30sec,* and *1min.*

Strip Duration

This option allows you to designate how much data is included in the strip. The maximum strip duration is 60 minutes.

To set the strip duration, place the cursor on the scroll bar below the *Strip Duration* display field. Move the scroll bar to the left for shorter duration or to the right for longer duration.

Strip Hole Location

This option allows space for binding printed report strips. Options are *none, top, bottom, left,* and *right.*

Start Data Storage

NOTE
You must be in the service mode to modify this setting.

This option allows you to designate how full disclosure is enabled for patients at the time of admission. Choices are *automatically for all beds, automatically if listed,* and *manually.*

Bed List

NOTE
You must be in the service mode to modify this setting. See "Access Service Mode" on page 3-31.

This option shows a listing of beds for which full disclosure data is automatically stored.

Unit License Default: Full Disclosure License Type

NOTE
You must be in the service mode to modify this setting. See "Access Service Mode" on page 3-31.

This option shows a list of Full Disclosure license options. Choices are *none*, *24 hours*, *48 hours*, and *72 hours*.

NOTE
If the default does NOT match the actual license, Full Disclosure does NOT work.

Offline Storage

Offline storage exists as a precautionary measure when contact with a monitor has been lost. The feature is applied most often when the monitor is being used in the Rover application, since the monitor "roves" from room to room, on and off the network.

If a discharge/admit cycle occurs off the network for a bed that is being full disclosed, the full disclosure sub-system is unaware that the patient has changed. When the bed returns to the network, full disclosure will present the data from the discharged and admitted patients as part of the more recent patient's data. Offline storage helps to prevent this by assuming that the patient has been discharged if the monitor is off the network for greater than the number of minutes selected with the *Offline Storage* control.

WARNING
POTENTIAL DATA LOSS — Do not allow a NO COMM (patient offline) event to exceed the time limit selected in the *Offline Storage* setting. The patient's full disclosure data is deleted if the time limit is exceeded.

NOTE
You must be in the service mode to modify the *Offline Storage* setting. See "Access Service Mode" on page 3-31.

To modify an offline storage time period, follow these steps.

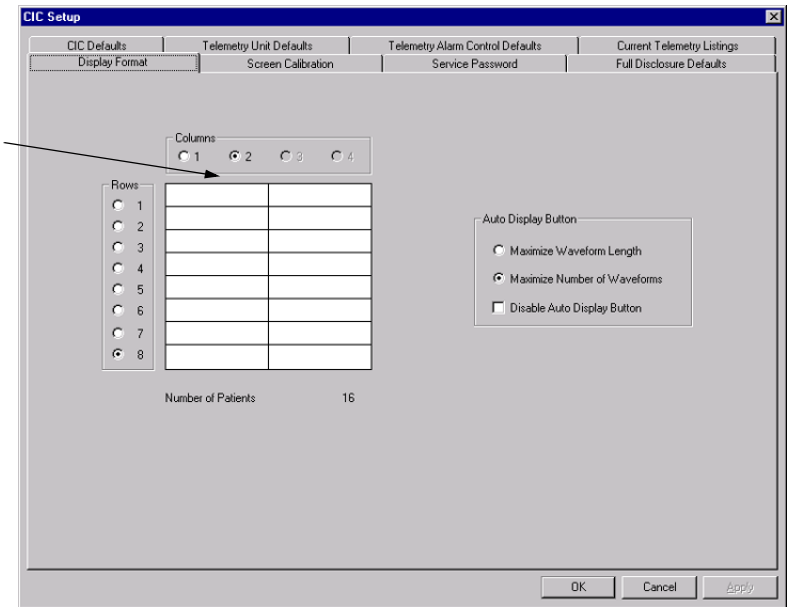
1. Select the *Full Disclosure Defaults* tab.
2. Click the *Offline Storage* field. A down arrow icon is displayed next to the current offline time period.
3. Click on the down arrow to display a list of time periods and select the desired time period. Choices are 30 mins, 1, 2, 4, 8, and 12 hours.
4. A prompt appears. Select *Yes* if you are sure you want to change the offline storage time. The offline storage menu closes, with the selected time remaining visible.

Restore

This button allows you to clear any modifications made to the *Full Disclosure* tab sheet and revert to the previous settings.

Set the Display Format

Open the Display Format Screen



Click on the *Display Format* tab as shown.

The *Display Format* tab sheet allows you to format the clinical information center's multiple patient viewer with the required number of patient windows.

NOTE

Modifications to display format are subject to licensing restrictions. Licensing determines the number of beds displayed on the CIC Pro screen. Modifying the display to show more than the licensed number of beds will result in blank slots in the display.

Columns

This option allows you to designate the number of columns of patient windows in the multiple patient viewer.

Rows

This option allows you to designate the number of rows of patient windows in the multiple patient viewer.

Map of new display

This option reflects the current Columns/Rows selections graphically. When the Columns or Rows selections change, this map is immediately updated.

Auto Display Button

This option allows you to set the function of the *Auto Display* button in the Main Menu, or to disable it. Choices are *Maximize Waveform Length, Maximize Number of Waveforms,* and *Disable Auto Display Button.*

Changing the Display Format

To change the display format, follow these steps.

NOTE

You must remove admitted beds from the display before you can select a display format that would eliminate those patient slots from the display.

To do this, right-click the mouse pointer in the appropriate slot, and choose *None* from the *Select Care Unit then Bed Number* menu.

NOTE

An alarm will sound when removing admitted beds from the display if the beds are not viewed on another CIC Pro.

1. Click on the selection corresponding to the number of columns you want in the multiple patient viewer.
2. Click on the selection corresponding to the number of rows you want in the multiple patient viewer.
3. Visually verify in the map of the new display that the new setting is what you want.

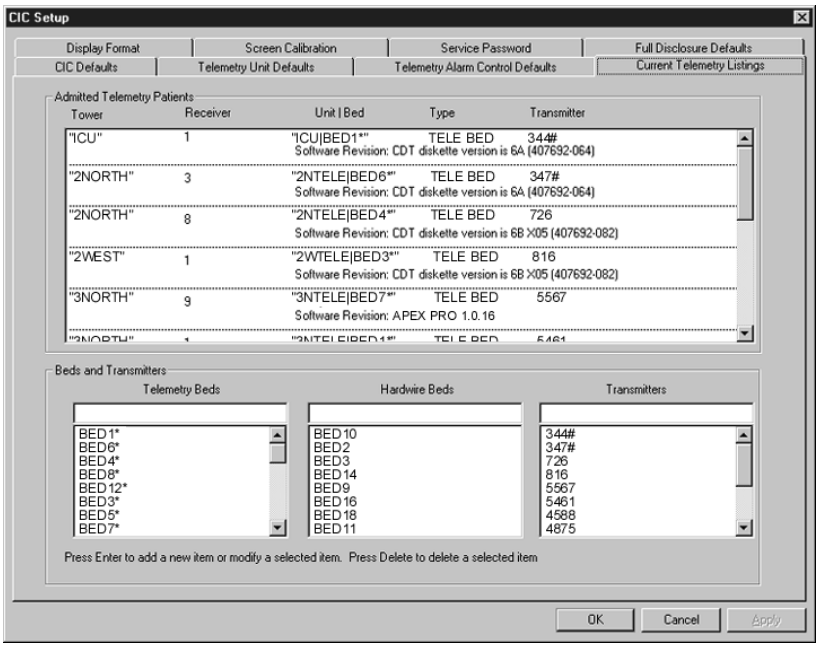
When finished, click *Apply* at the lower right corner of the screen to save the settings.

Set the Current Telemetry Listings

NOTE

Current telemetry listings should only be done after the CIC Pro name and computer name have been configured.

Open the Current Telemetry Listings Screen



Click on the *Current Telemetry Listings* tab as shown.

In user mode, the *Current Telemetry Listings* tab sheet is view-only. You must be in the service mode to make modifications to the telemetry settings. See “Access Service Mode” on page 3-31.

Admitted Telemetry Patients

The *Admitted Telemetry Patients* control is for display only.

NOTE

This overview covers the controls in a row. Each row contains information for one telemetry patient (sorted by TTX number).

The second line of an entry shows the current software level for the patient bed in question.

- *Tower*—indicates which telemetry receiver cabinet (tower) this telemetry patient is communicating with.
- *Receiver*—indicates which receiver assembly inside the telemetry receiver cabinet this telemetry patient is communicating with.

  NOTE

  The following information only applies to CDT-LAN with software versions prior to 6D, it does not apply to CDT-LAN software version 6D or ApexPro.

- *Unit|Bed*—indicates the unit and bed to which this patient has been assigned.
- *Type* —indicates the type of patient this is: *Tele Bed* or *Tele Combo*.
- *Transmitter*—indicates the identification number assigned to this patient's transmitter.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Bed and Transmitters

The *Bed and Transmitters* controls can only be modified from within service mode.

- *Telemetry Beds*—allows you to add, modify, or delete a telemetry bed name.
- *Hardwire Beds*—allows you to add, modify, or delete a hardwire bed name.
- *Transmitters*—allows you to add, modify, or delete a telemetry transmitter.

Enter a New Item

Enter a new item in a list as follows:

1. Position the cursor in the blank box at the top of the list.
2. Type in the desired information and press **Enter** to add the entry to the list.
3. When selections are complete, click *Apply* at the lower right corner of the screen to save the new settings.

Editing Entries

Edit existing entries as follows:

1. Locate the item in the scroll list.
2. When you click on the entry, it appears in the editing box.
3. Edit the information and press **Enter** to update the entry in the list.

4. When selections are complete, click *Apply* at the lower right corner of the screen to save the new settings.

NOTE

Telemetry beds are distinguished from monitoring beds by an asterisk at the end of the bed number. When entering or editing information in the *Telemetry Beds* list, be sure to add an asterisk to the end of the bed name.

Lock or Unlock Beds

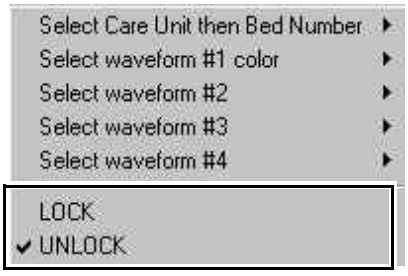
In the Service Mode, the clinical information center can be configured with the bed names either in locked or unlocked mode. When locked, the bed name is permanently allocated to a particular slot on the CIC Pro and users are unable to move the bed to another slot.

NOTE

It is possible to admit a patient to a window with a bed name that is locked to NONE. To avoid duplication of patient waveforms, a window locked as NONE should not be used to admit a patient.

To lock or unlock a bed:

1. Position the mouse pointer in the patient's waveform window.
2. Press the right mouse button to open the right-click menu.



3. Check either *LOCK* or *UNLOCK*. The right-click menu closes, and the change takes effect immediately.

Change CIC Pro Language

WARNING

LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

See "Commit Changes to the Write Filter" on page 3-57.

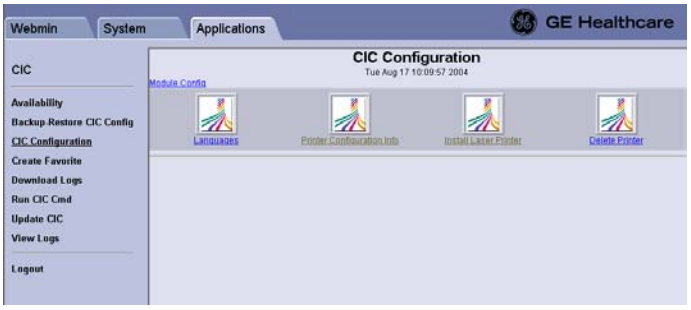
The language configuration utility allows you to configure the display language for the CIC Pro application.

NOTE

You must log in to the CIC Pro as "administrator" before you can change the CIC Pro language. See "System Logons" on page 2-15.

To change the CIC Pro language:

1. If necessary, connect and login to Webmin locally as described in "Local Webmin Access from the CIC Pro Computer" on page 2-17 and "Webmin Login" on page 2-18.
2. Click the *Applications* tab.
3. Click the *CIC Configuration* link. The *CIC Configuration* window displays.



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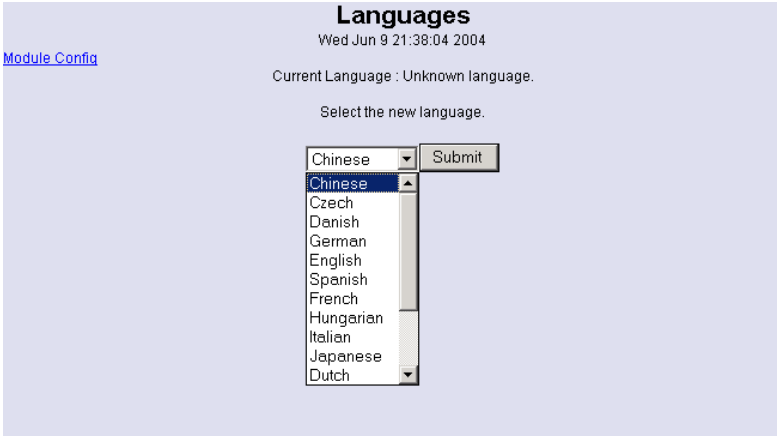
4. Click the *Languages* button. The *Languages* window displays.



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5. Select the language for the installation location from the drop-down list.
6. Click *Submit*.
7. Select *Start* > *Shut Down*, then select *Restart*.
8. Click **OK**. Wait for the log on screen.
9. Allow the CIC Pro to restart normally in user mode.
10. Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

Install Optional Licenses

WARNING
LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

See "Commit Changes to the Write Filter" on page 3-57.

Install any optional application licenses at this time. Refer to the GE "Unity Network® Information Suite (IS) Server License Configuration Guide".

CIC Pro Full Disclosure License Management Setup

Every CIC Pro with version 4.1.x software has the ability to store 16 beds of Full Disclosure (FD) data for one hour without a license. A CIC Pro with the Full Disclosure option and version 4.1.x software has the ability to store up to 16 beds for 72 hours with the appropriate licenses and license settings.

When operating two CIC Pros within the same care unit, with one having the Full Disclosure option, and the other without: it is necessary to turn full disclosure OFF on the CIC Pro without the full disclosure option, to prevent a conflict between the two different storage capacities of the CIC Pros.

To set turn full disclosure OFF, set the full disclosure License type to *none*. See "Unit License Default: Full Disclosure License Type" on page 3-48.

Commit License Changes to the Write Filter

Complete any other pending CIC Pro configuration procedures and then complete "Commit Changes to the Write Filter" on page 3-57.

Commit Changes to the Write Filter

After all CIC Pro configuration is complete, commit (save) all the configuration changes to the write filter.

WARNING
LOSS OF MONITORING — You must commit (save) the following configuration changes to the CIC Pro write filter:

- IP address
- Computer name
- Optional licenses
- Language

If a hard drive failure occurs, the CIC Pro discards uncommitted (unsaved) configuration changes. During the reboot process, the CIC Pro uses the last committed (saved) configuration settings, which may be different from the settings the CIC Pro was using before the hard disk failed.

See "Commit Changes to the Write Filter" on page 3-57.

NOTE
You should commit (save) the following configuration changes to the CIC Pro write filter:

- Dual display
- Touch screen display
- Printer installation

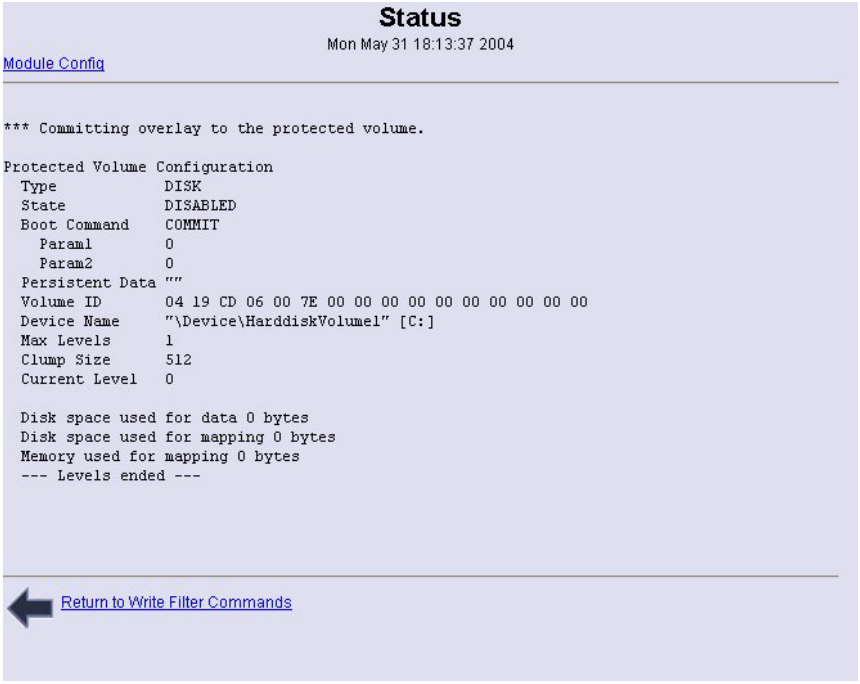
If a hard drive failure occurs, the CIC Pro does not save these uncommitted (unsaved) configuration changes. After the CIC Pro reboots, you must reconfigure these settings.

See "Commit Changes to the Write Filter" on page 3-57.

Commit changes to the write filter as follows:

1. If you are not already logged into the CIC Pro as "administrator", stop the CIC Pro, shut down the CIC Pro and log back in as "administrator" according to "Access Service Mode" on page 3-31
2. Double-click the Internet Explorer icon on the Windows desktop. Access and login to Webmin locally as described in "Webmin Overview" on page 2-17.
3. Click the *System* tab.
4. Click the *Write Filter* link. The *Write Filter Commands* window displays.

5. Click the *Commit Changes* button.


Status
Mon May 31 18:13:37 2004
Module Config
*** Committing overlay to the protected volume.
Protected Volume Configuration
Type DISK
State DISABLED
Boot Command COMMIT
Param1 0
Param2 0
Persistent Data ""
Volume ID 04 19 CD 06 00 7E 00 00 00 00 00 00 00 00 00 00
Device Name "\Device\HarddiskVolume1" [C:]
Max Levels 1
Clump Size 512
Current Level 0
Disk space used for data 0 bytes
Disk space used for mapping 0 bytes
Memory used for mapping 0 bytes
--- Levels ended ---
Return to Write Filter Commands

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6. Restart the CIC Pro according to "Safe Shutdown/Restart Procedure" on page 4-4.

Time and Date Configuration

NOTE

Print out all pertinent time-sensitive admitted patient information before adjusting the time and date settings.

CAUTION

Disconnect the CIC Pro from the Unity MC network before setting the time/date.

Changes to the time/date data affects all units on the network. This can result in other monitors altering the time and date parameter of some patient data.

1. Disconnect the Unity Network IX network connection from the back of the CIC Pro. See "You must restart the CIC Pro for the new IP Address settings to take effect." on page 3-22.
2. Select *Setup CIC* at the bottom of the screen.
3. From the *CIC Setup* screen, select the *Service Password* tab.
4. Type **mms_com** at the password prompt. Press **Enter**. Verify the Windows command prompt window opens and the title bar is blue, indicating it is active. If not, place your cursor inside the prompt window and click to activate it.

NOTE

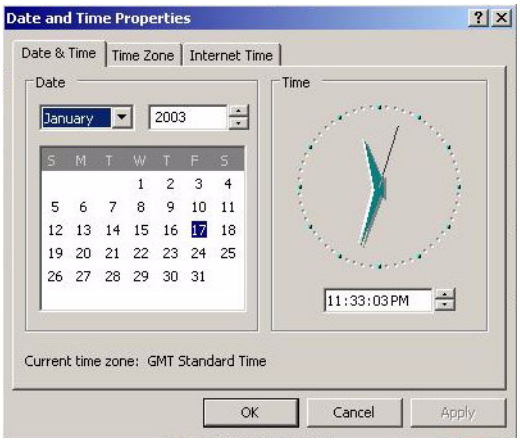
Software version *4.1.x* shown in the following steps is used for this example only. The version number displayed in the command prompt should match the version found in the lower left corner of the *CIC Setup* screen.

5. Verify *C:\Program Files\Marquette\CIC\4.1.x>* appears, indicating the current working directory. If not, type the following:

   cd\Program Files\Marquette\CIC\<your software version> and press **Enter**.

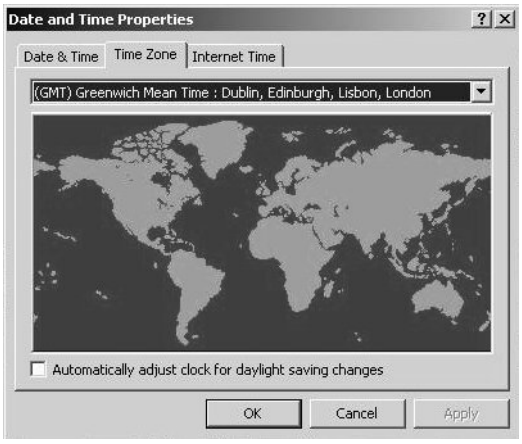
6. At the command prompt type **su<space>cicadm<space>cicadm1,3,5,7** and press **Enter**.

7. Type **timedate** and press **Enter**. The *Date and Time Properties* window displays.



8. Select the *Date & Time* tab. Set the correct date and time. Click *Apply*.

9. Select the *Time Zone* tab, and verify the correct time zone for the installation site is selected.



10. Verify the *Automatically adjust clock for daylight saving changes* box is NOT checked.

NOTE

DO NOT select the *Automatically adjust clock for daylight saving changes* checkbox. You must manually make Daylight Savings Time changes in the monitoring system. This change may affect patient data as noted above

11. Click *Apply*.

    NOTE
    DO NOT make any changes on the *Internet Time* tab.

12. Click *OK* to close all windows when finished.
13. Reconnect the Unity Network IX network connection cable to the back of the CIC Pro. See."You must restart the CIC Pro for the new IP Address settings to take effect." on page 3-22

Completion

Backup CIC Pro Configuration

To simplify system restore if it should become necessary: once the CIC Pro is installed and configured, backup the CIC Pro configuration to a remote location according to "Backup-Restore CIC Configuration" on page 4-16.

Exit Service Mode and Proceed to Checkout Procedures

Click on *Setup CIC* at the bottom of the screen and respond *Yes* to the exit Service Mode message. Proceed with the "Checkout Procedures" on page 4-28.

4 Maintenance

For your notes

Schedule

Manufacturer Recommendation

WARNING
Failure to implement a satisfactory maintenance schedule may result in equipment failure and present health hazards. The sole responsibility for performing the recommended maintenance schedule rests with the individuals, hospitals, or institutions utilizing the device. The manufacturer does not in any manner assume the responsibility for performing the recommended maintenance schedule, unless an Equipment Maintenance Agreement exists. *Information Technologies* service personnel may, at their discretion, follow the procedures provided in this manual as a guide during visits to the equipment site.

To make sure the CIC Pro hardware remains in proper operational and functional order, a proper maintenance schedule must be observed. The following schedule is recommended:

- **Visual Inspection:** This should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and prior to servicing the unit.
- **Cleaning:** This should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Calibration:** Screen calibration should be performed by service personnel upon receipt of the equipment, as directed in "Calibrate the Screen" on page 3-32.
- **Electrical Safety Checks:** These should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Checkout Procedure:** This should be performed by qualified service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Replacing the Hard Drive:** You should replace the hard drive every three years. Refer to "Hard Drive" on page 6-10 for hard drive replacement information.

PM Form

For the latest PM form associated with this product, contact GE Medical Systems *Information Technologies* Service. Make a copy of the GE Unity Network CIC Pro PM form and use the copy as a guide as you go through this section of the manual. The PM form can then be archived for reference after you have finished all the steps required to completely test the equipment.

If, for any reason, any of the procedures or tests results are not within the indicated standards, contact GE Medical Systems *Information Technologies* Technical Support (see "How to Reach Us...").

Safe Shutdown/Restart Procedure

WARNING
Beds displayed on the CIC Pro will not be monitored while the unit is shut down. Additionally, beds admitted on a shutdown CIC Pro will display "NO COMM", when displayed at other stations.

Proper system shutdown is important. Errors can occur if the system is shut down incorrectly.

To properly shut down the system:

1. Select *Setup CIC* at the bottom of the screen.
2. Select the *Service Password* tab.
3. Type **mms_com** at the password prompt. Press **Enter**.
4. At the Windows command prompt, type **stop** and press **Enter**.
5. Open the *Start* menu located in the lower left corner of the Windows main screen.
6. Select *Shut Down* from the *Start* menu.
7. From the *Shut Down Windows* dialog you can log off the current user, restart the CIC Pro or shut it down. Select either *Log off*, *Shut down*, *Restart*, as required, and click *OK*.
8. If you intend to log back on immediately after shutting down, simultaneously hold down the left **Shift** key while clicking *OK*. Continue holding the **Shift** key until prompted for logon.
9. If you intend to shut the CIC Pro down, wait until the message "It is now safe to turn off your computer", and turn power off at the switch on the back panel.

CAUTION
EQUIPMENT DAMAGE/DATA LOSS — Turn the CIC Pro power switch off only when the message "It is now safe to turn off your computer" is display. Equipment damage or data loss can occur if this instruction is not followed.

Controlling Electrostatic Discharge Damage

All external connector inputs and outputs of the device are protected from ElectroStatic Discharge damage (ESD) damage. However, if the interior of the device needs to be accessed for any reason, internal components and assemblies are susceptible to ESD damage. This includes human hands, non-ESD protected work stations and/or improperly grounded test equipment.

The following guidelines help make a service workstation more resistant to ESD damage:

- Discharge any static charge you may have built up before handling semiconductors or assemblies containing semiconductors. This can be done by touching any bare metal on the CIC Pro chassis, the cable connector jacks or the ground post on the back of the unit. Do this frequently and repeatedly while working on the unit.
- Wear a grounded, antistatic wristband (3M part number 2046 or equivalent) or heel strap at all times while handling or repairing assemblies containing semiconductors.
- Use properly grounded soldering and test equipment.
- Use a static-free work surface (3M part number 8210 or equivalent) while handling or working on assemblies containing semiconductors.
- Keep the work surface free of nonconducting materials such as ordinary plastic assembly aids and foam packing.
- Do NOT remove semiconductors or assemblies containing semiconductors from antistatic containers (Velo-stat bags) until absolutely necessary.
- Make sure power to an assembly is turned off before removing or inserting a semiconductor.
- Do NOT slide semiconductors or electrical/electronic assemblies across any surface.
- Do NOT touch semiconductor leads unless absolutely necessary.
- Semiconductors and electrical/electronic assemblies should be stored only in antistatic bags or boxes.

These guidelines cannot guaranty a 100% static-free workstation, but greatly reduce the potential for failure of any electrical/electronic assemblies due to electrostatic discharge.

Visual Inspection

Carefully inspect the CIC Pro and all peripheral components prior to installation, one time each year thereafter, and each time the equipment is serviced.

Follow these steps to perform a complete visual inspection:

1. **GENERAL INSPECTION:** Inspect the external surfaces of the CIC Pro components and display monitor for obvious physical damage. Do NOT use the device if physical damage exists. Refer damaged equipment to qualified service personnel for repair.
2. **FANS:** Inspect all cooling fans in the CIC Pro to make sure they are in good working order and are not clogged with dust. These fans draw outside air into the unit to cool internal components.
3. **CONNECTORS:** Inspect all external connectors for damaged pins, prongs and connector housings. Refer damaged equipment to qualified service personnel for repair. Ensure that all connections are properly seated and secure.
4. **CABLE INSULATION:** Inspect all cables, insulation, strain-reliefs and connectors for damage, cracks or degradation. Refer damaged equipment to qualified service personnel for repair.

Cleaning

Before Cleaning

1. Complete the "Safe Shutdown/Restart Procedure" on page 4-4.
2. Turn off, and unplug, all equipment.

NOTE

When unplugging, pull on the plug, not the cord.

WARNING

In order to remove power from the CIC Pro, disconnect the power cord from the wall outlet. The on/off button (a convex button) on the front panel does not disconnect the CIC Pro from AC power.

Additionally, wait 40 seconds after disconnecting the CIC Pro power cord from the wall outlet. The unit remains energized for a period of time after shutdown.

External Surfaces

Use a soft, lint-free cloth dampened with clean water to wipe down the external surfaces of the CIC Pro. Do NOT use aerosol liquid sprays, solvents, or abrasives.

CAUTION

Make sure water does not run into any equipment openings. An electrical shock hazard exists and/or the equipment can be damaged if water is allowed to get inside.

Do NOT use aerosol liquid sprays, solvents, or abrasives.

Internal Components

1. Verify all equipment is turned off and unplugged.
2. Disconnect all peripheral devices from the CIC Pro.
3. Remove the CIC Pro cover. Refer to "Complete "Field Replacement Preparation" on page 6-5." on page 6-8.
4. Using a compressed air duster recommended for computers and electronics, carefully blow out any dust that may have accumulated on internal components.

For component level disassembly/reassembly information, refer to the "Parts Lists, Drawings and Replacement" Chapter, starting on page 6-1.

Fans

Remove all of the dust from the fans and the fan intakes. The fans and fan intakes usually accumulate the most dust. Accumulated dust can clog the fans and fan intakes and prevent proper cooling.

Keyboard

Lightly wipe the keyboard with a clean, soft cloth dampened with water.

Mouse

The mouse may require cleaning if the on-screen cursor no longer smoothly follows mouse movements.

Optical Mouse

Clean an optical-style mouse with a clean, soft cloth dampened with water.

NOTE

The optical mouse has no field-serviceable moving parts. If cleaning does not restore function, the mouse may need to be replaced.

Mechanical Mouse

NOTE

Using the mouse on a clean, lint-free surface will help reduce the amount of cleaning the mouse requires.

1. Turn the mouse upside-down and turn the plastic ring on the bottom *counterclockwise* to disengage it.
2. On some mouse devices, you may need to press the plastic ring (rather than turn it) to disengage it.
3. Turn the mouse right-side up with one hand and catch the ring and the ball with your other hand.
4. Clean the three small rollers inside the mouse with a cotton swab moistened with water. Rotate the rollers to clean all around them.
5. Wipe the mouse ball with a clean, soft, dry, and lint-free cloth.

6. If necessary, wash the mouse ball with warm, soapy water (use a mild soap such as a dish washing liquid) and then dry the mouse ball thoroughly.
7. Using a compressed air duster recommended for computers and electronics, blow into the mouse case to remove any dust that has collected there.
8. Put the ball and ring back in place.
9. Test the mouse. If it does not track smoothly, repeat this procedure.

NOTE

It is possible for the mouse to become worn past the point where cleaning can restore proper tracking function. When this occurs, the mouse should be replaced.

Display Screen

To clean the display screen, put household glass cleaner on a soft cloth and wipe the screen.

CAUTION

DO NOT spray the cleaner directly on the display screen. Liquid getting inside the monitor or CIC Pro could cause damage or present an electrical shock hazard.

Follow the display monitor's manufacturer's recommendations for cleaning the display screen.

Electrical Safety Tests

General

Electrical safety tests provide a method of determining if potential electrical health hazards to the operator of the device exist.

These tests apply to the server, all peripherals, and their three-prong plugs.

Recommendations

To help you establish a systematic maintenance routine, GE Medical Systems *Information Technologies* recommends that you perform all safety tests presented in this chapter:

- Upon receipt of the device,
- Every twelve months thereafter,
- Each time the main enclosure is disassembled or a circuit board is removed, tested, repaired, or replaced, and
- Record the date and results on the "Maintenance Checklist" on page 4-32.

WARNING
Failure to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazards. Unless you have an Equipment Maintenance Contract, GE Medical Systems *Information Technologies* does not in any manner assume the responsibility for performing the recommended maintenance procedures. The sole responsibility rests with the individual or institution using the equipment. *Information Technologies* service personnel may, at their discretion, follow the procedures provided in this manual as a guide during visits to the equipment site.

Test Conditions

Electrical safety tests may be performed under normal ambient conditions of temperature, humidity, and pressure.

Test Equipment

The manufacturer recommended test equipment required to perform electrical safety tests is listed below. Equivalent equipment may be substituted as necessary.

Required Tools/Equipment	
Item	**Specifications**
Leakage Current Tester	See figures below
Digital Multimeter (DMM)	resistance, AC voltage

Wall Receptacle Test

Before starting the tests, the wall receptacle from which the device will get electrical power must be checked. This test checks the condition of the wall receptacle to ensure correct results from leakage tests.

For international wall receptacles, refer to the internal standards agencies of that particular country. Use a digital multimeter to ensure the wall receptacle is wired properly.

If other than normal polarity and ground is indicated, corrective action must be taken before proceeding. The results of the following tests will be meaningless unless a properly wired wall receptacle is used.

Ground (Earth) Integrity

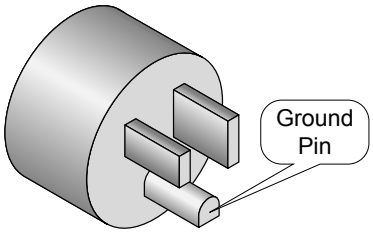
Listed below are two methods for checking the ground (earth) integrity, “Ground Continuity Test” and “Electrical Leakage Tests”. These tests determine whether the device’s exposed metal and power inlet’s earth (ground) connection has a power ground fault condition.

Perform the test method below that is required by your Country/Local governing safety organization.

Ground Continuity Test

Completion of this test is checked by the following steps:

1. Disconnect the DUT (device under test) from the wall receptacle.
2. Connect the negative (–) lead of the ohm meter to the protective earth terminal (ground pin in power inlet connector) or the protective earth pin in the MAINS PLUG (ground pin in power cord). Refer to the US 120VAC power cord figure below.



3. Set the DMM to measure Ohms.
4. Connect the positive (+) lead of the Ohm meter to all exposed metal surfaces on the DUT. If the metal surfaces are anodized or painted scrape off a small area in a inconspicuous area for the probe to make contact with the metal.
5. Resistance should read to pass:
   - 0.1 ohm or less to power inlet ground pin
   - 0.2 ohms or less to power cord ground pin

Electrical Leakage Tests

Impedance of Protective Earth Connection

This test, unlike a ground continuity test, will also stress the ground system by using special ground bond testers e.g. Kikusui (model 872 or TOS 6100) or Associated Research model HYAMP® Jr. Model 3030D.

This test normally is only required as a manufacturing production test to receive safety agency compliance UL 609050, CSA 609050-00 (C22.2) and EN60950.

Some country agency's DO require this test after field equipment repairs e.g. Germany's DIN VDE 0751 standards.

Consult your country/local safety agency if there is a question.

Compliance is checked by the following steps:

1. A current not less than 10A and not exceeding 25A from a current source with a frequency of 50 or 60 Hz with a no-load voltage not exceeding 6 V is passed for at least 5 seconds through the PROTECTIVE EARTH TERMINAL or the protective earth pin in the MAINS PLUG and each ACCESSIBLE METAL PART which could become LIVE in case of failure in BASIC INSULATION.
2. The voltage drop between the parts described is measured and the impedance determined from the current and voltage drop. It shall not exceed the values indicated.

For EQUIPMENT without a POWER SUPPLY CORD the impedance between the PROTECTIVE EARTH TERMINAL and any ACCESSIBLE METAL PART which is PROTECTIVELY EARTHED shall not exceed 0.1 ohms.

For EQUIPMENT with a POWER SUPPLY CORD the impedance between the protective earth pin in the MAINS PLUG and any ACCESSIBLE METAL PART which is PROTECTIVELY EARTHED shall not exceed 0.2 ohms.

When taking this measurement, move the customer's power cord around, no fluctuations in resistance should be observed.

Ground (Earth) Wire Leakage Current Tests

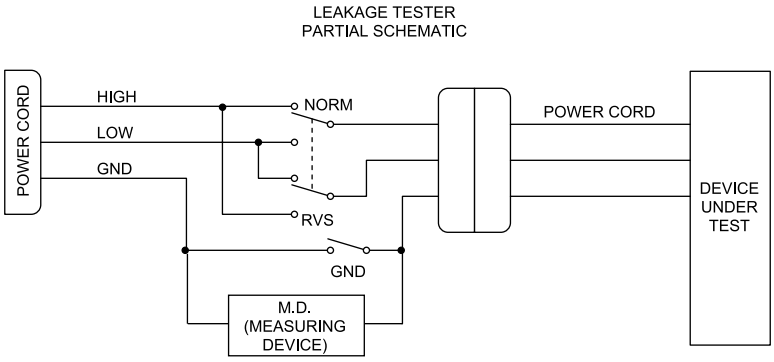
Perform this test to measure current leakage through the ground (earth) wire of the equipment during normal operation.

1. Set the leakage tester switches as follows:
   - Set the GND switch to **GND OPEN**.
   - Set the polarity switch to **NORM/FORWARD**.
   - Set the power switch to **OFF**.
2. Connect a digital multimeter (DMM) to the METER jacks on the leakage tester. Set the DMM to measure AC millivolts.
3. Connect the power cord of the device under test to the power receptacle on the rear of the leakage tester.

   NOTE:

   The device under test is to be tested at its normal operating voltage.
4. Set the leakage tester power switch to ON.
5. Set the power switch of the device under test to ON.
6. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA, the device under test fails and should be repaired and tested again.
7. Set the polarity switch on the leakage tester to RVS (reverse).
8. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA, the device under test fails and should be repaired and tested again.

9. Set the leakage tester power switch to OFF.



NOTE

The MD (measuring device) is the circuitry defined by the appropriate standard for measuring leakage current.

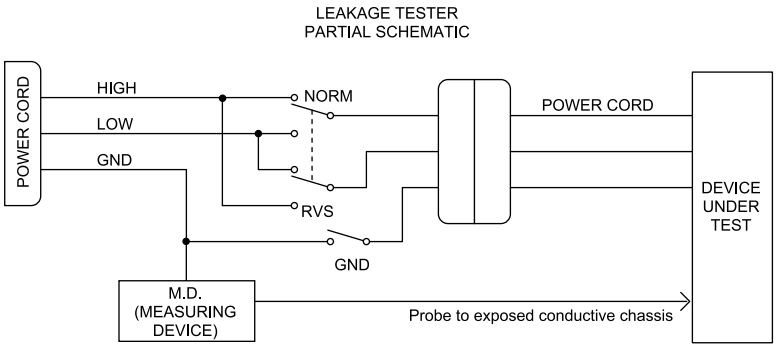
The measuring devices, defined by various standard organizations (IEC, UL, etc.), produce almost identical test measurement results.

Enclosure (Chassis) Leakage Current Test

Perform this test to measure current leakage through exposed conductive surfaces on the device under test during normal operation.

1. Set the leakage tester switches as follows:
   - GND switch - OPEN,
   - Polarity switch - NORM.
2. Connect a meter lead between the CHAS connector on the rear of the leakage tester and an unpainted, non-anodized chassis ground on the unit under test.
3. Set the leakage tester power switch to ON.
4. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA the device under test fails and should be repaired and tested again.
5. Set the polarity switch to RVS and observe the same meter readings as in the previous step.
6. Set the GND switch on the leakage tester to CLOSED.
7. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA the device under test fails and should be repaired and tested again.
8. Set the polarity switch to RVS and observe the same meter readings as in the previous step.
9. Set the polarity switch to NORMAL and observe the same meter readings as in the previous step.

10. Set the leakage tester power switch to OFF and remove the meter lead connected in step 2.



Test Completion

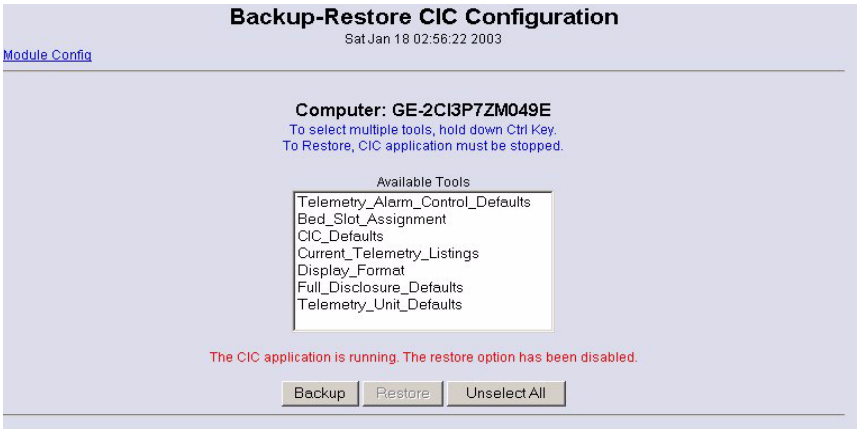
Disconnect all test equipment from the device. Disconnect the device power cord plug from the leakage tester power receptacle. Disconnect the leakage tester from the wall receptacle.

Backup-Restore CIC Configuration

NOTE

The backup portion of this section should be performed at regular intervals and/or whenever changes are made to CIC Pro configuration settings, to ensure complete system restore if it should become necessary.

Click the *Backup-Restore CIC Configuration* link to display the following window:



NOTE

See "Data Module Detail" on page 4-24 for a summary of the data contained in the individual modules displayed in the *Available Tools* list.

Planning Backup/Restore Strategy

When planning backup/restore strategy in a care unit running more than one CIC Pro, it's important to know that when a CIC Pro starts up, it will update some of it's configuration data to match any other CIC Pros it finds on the care unit network. The exact data that is automatically updated in this fashion is shown in "Data Module Detail" on page 4-24. In general, this would be data common to the care unit that should be consistent between all the CIC Pros within that care unit. All other configuration data is specific to the local CIC Pro only, and is not shared between the CIC Pros in the care unit.

To follow are examples of CIC Pro use cases, demonstrating how this automatic update impacts the backup/restoration process:

Restore in Care Unit Running One CIC Pro

Automatic update does not occur, and is not a factor in this situation: all configuration data written to the CIC Pro during the restoration process remains intact, since no other CIC Pros exist to trigger an automatic update.

Adding/Upgrading a CIC Pro in Care Unit Running Multiple CIC Pros

When a CIC Pro is added to, or upgraded, in a care unit already running other CIC Pros, configuration data common to the care unit is changed in the new/upgraded CIC Pro, when it starts up, to match the other CIC Pros found in the care unit network. Configuration data specific only to the new/upgraded CIC Pro does not change.

Restore Previous Configuration Data in Care Unit Running Multiple CIC Pros

In certain cases, it may be necessary to revert the CIC Pros in a care unit to back to a past configuration.

In order to do this, it is necessary to:

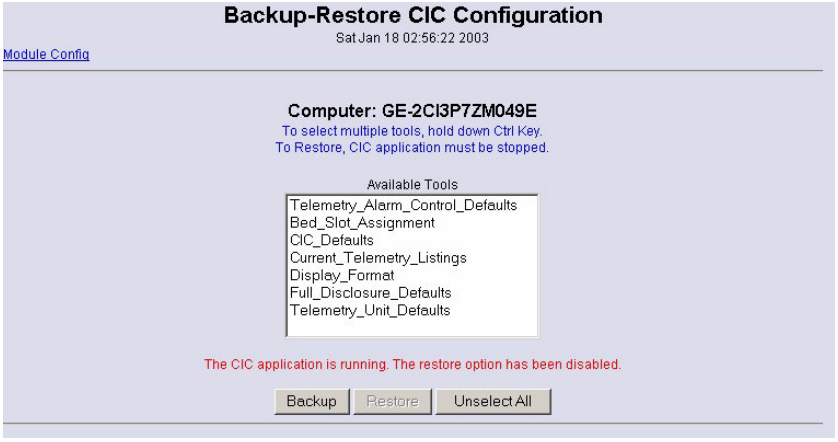
1. Shut down all but one of the CIC Pros in the care unit. This prevents the restore from being overwritten by associated data from other CIC Pros running on the care unit network.

   NOTE

   The CIC Pro application must be stopped in order to perform a restore. Because configuration data is automatically updated to match other CIC Pros found running in the care unit. If other CIC Pros are left running, when the restored CIC Pro application starts back up, some configuration data would be overwritten by the automatic update.

2. Stop the CIC Pro application on the one CIC Pro left running, and perform the restore procedure. Restart the CIC Pro application.
3. Start up the other CIC Pros, one at a time. Common configuration data associated with the care unit is updated with data from the restored CIC Pro as the other CIC Pros start back up.

Backup

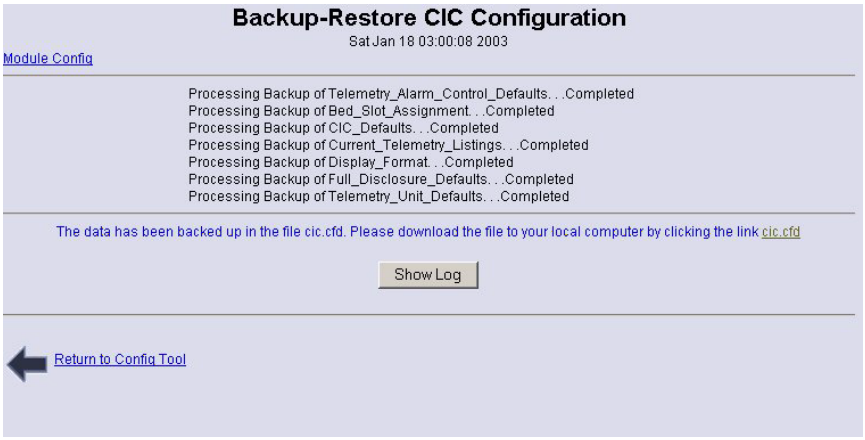


1. Backup must be done from a remote computer. Access the Webmin application remotely according to "Remote Webmin Access from an Intranet Computer" on page 2-17.
2. Log in to the Webmin application according to "Webmin Login" on page 2-18.
3. Click the *Applications* tab.
4. Click the *Backup-Restore CIC Config* link.
5. Select the modules from the *Available Tools* list you want to backup. Click *Unselect All* to deselect selected files.

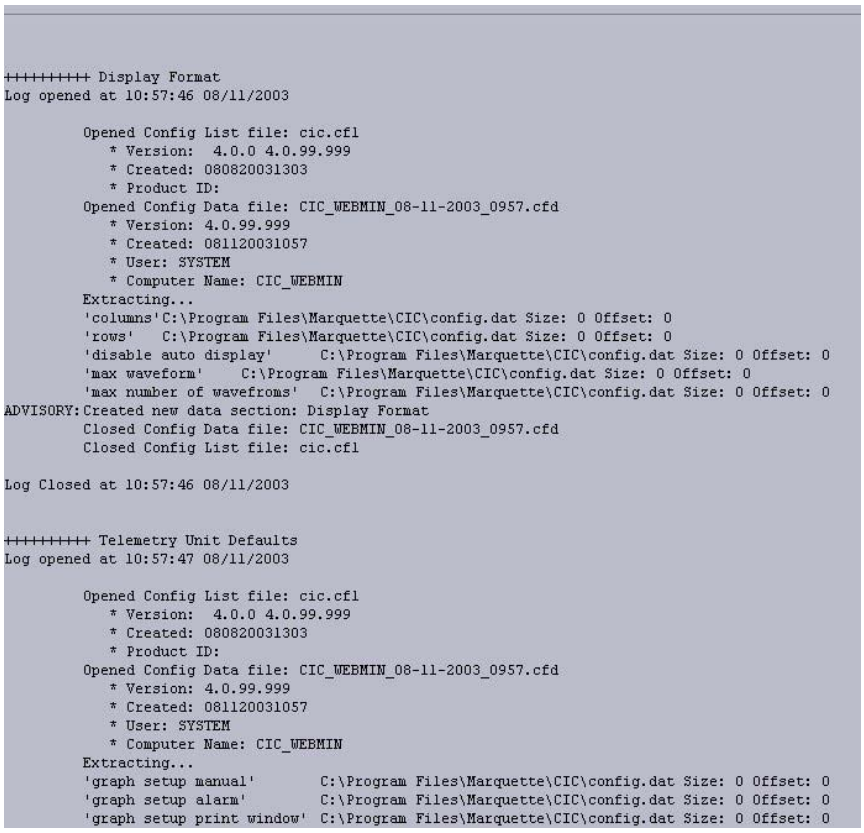
   NOTE

   Ctrl + click to select multiple modules. Click *Unselect All* to deselect modules in the list.

6. Click *Backup*. The selected files are temporarily written to the CIC Pro and are prepared for downloading to your local computer.

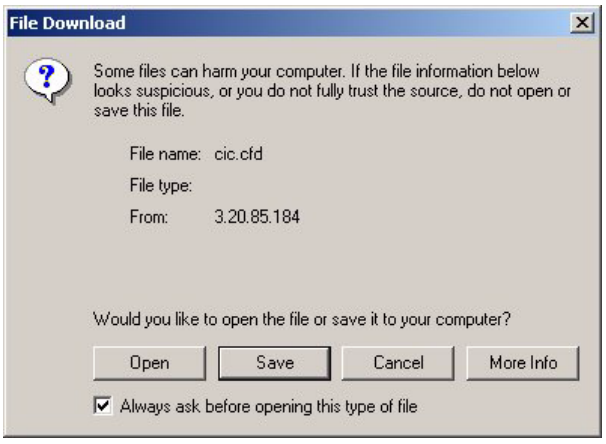

Backup-Restore CIC Configuration
Sat Jan 18 03:00:08 2003
Module Config
Processing Backup of Telemetry_Alarm_Control_Defaults. . .Completed
Processing Backup of Bed_Slot_Assignment. . .Completed
Processing Backup of CIC_Defaults. . .Completed
Processing Backup of Current_Telemetry_Listings. . .Completed
Processing Backup of Display_Format. . .Completed
Processing Backup of Full_Disclosure_Defaults. . .Completed
Processing Backup of Telemetry_Unit_Defaults. . .Completed
The data has been backed up in the file cic.cfd. Please download the file to your local computer by clicking the link cic.cfd
Show Log
Return to Config Tool

7. Click *Show Log* to view a summary of the backup configuration file building process.



```
++++++++++ Display Format
Log opened at 10:57:46 08/11/2003

        Opened Config List file: cic.cfl
           * Version:  4.0.0 4.0.99.999
           * Created: 080820031303
           * Product ID:
        Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
           * Version: 4.0.99.999
           * Created: 081120031057
           * User: SYSTEM
           * Computer Name: CIC_WEBMIN
        Extracting...
        'columns'C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'rows'   C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'disable auto display'     C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'max waveform'    C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'max number of wavefroms'  C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
ADVISORY:Created new data section: Display Format
        Closed Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
        Closed Config List file: cic.cfl

Log Closed at 10:57:46 08/11/2003


++++++++++ Telemetry Unit Defaults
Log opened at 10:57:47 08/11/2003

        Opened Config List file: cic.cfl
           * Version:  4.0.0 4.0.99.999
           * Created: 080820031303
           * Product ID:
        Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
           * Version: 4.0.99.999
           * Created: 081120031057
           * User: SYSTEM
           * Computer Name: CIC_WEBMIN
        Extracting...
        'graph setup manual'       C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'graph setup alarm'        C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
        'graph setup print window' C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
```

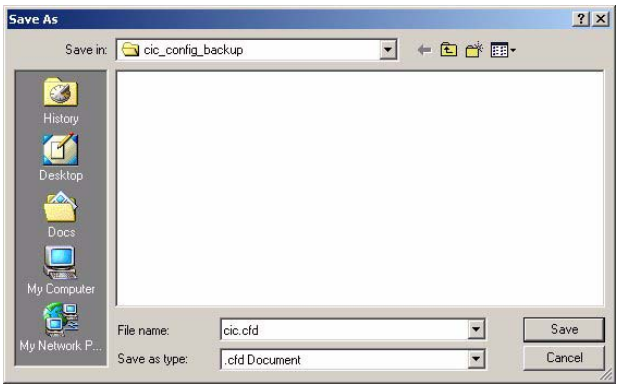
8. Click the cic.cfd link to begin the download process. A file download window displays.


File Download
Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.
File name: cic.cfd
File type:
From: 3.20.85.184
Would you like to open the file or save it to your computer?
Open
Save
Cancel
More Info
Always ask before opening this type of file

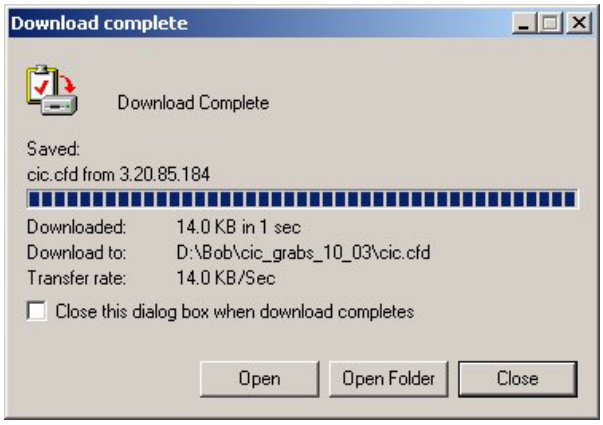
NOTE

Depending upon the operating system of your local computer, the following download windows may be vary slightly in appearance.

9. Click *Save*. The *Save As* window displays. Navigate to a directory on your local computer where you want to save the downloaded configuration file.



10. Click *Save*. After the file is downloaded, the *Download complete* window displays. Click *Close* to close the *Download complete* window.



Restore

1. Shut down all of the CIC Pros in the care unit.

   NOTE
   The CIC Pro application must be stopped in order to perform a restore. Because configuration data is automatically updated to match other CIC Pros found running on the care unit, if other CIC Pros are left running, when the restored CIC Pro application starts back up, some configuration data would be overwritten by the automatic update.

2. Access the Webmin application remotely according to "Remote Webmin Access from an Intranet Computer" on page 2-17.

   NOTE
   Access the Webmin on the CIC Pro you want to restore.

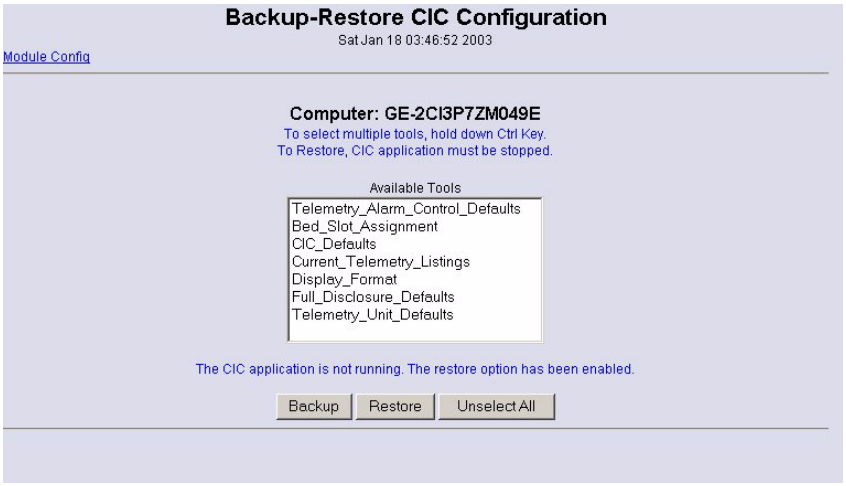
3. Log in to the Webmin application according to "Webmin Login" on page 2-18.
4. Click the *Applications* tab.
5. Click the *Backup-Restore CIC Config* link.

6. Select the modules from the *Available Tools* list you want to restore.

NOTE

Modules selected from the list should match the modules that were selected when the configuration was backed up during "Backup" on page 4-18. Modules selected for restore, not selected during backup, will not contain any data.

For accurate information about the results of a restore procedure, view the restore log, as directed in step 12.



NOTE

Ctrl + click to select multiple items from the lists. Click *Unselect All* to deselect items in the lists.

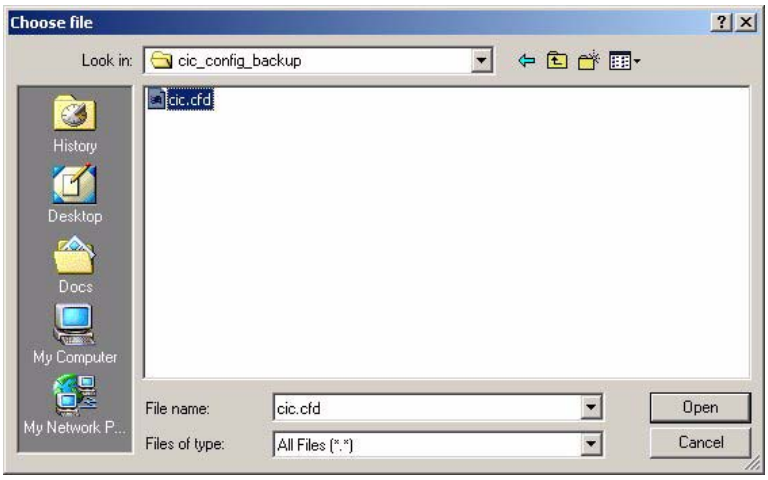
7. Click *Restore*. The *Upload CFD file* window displays.

Upload CFD file
Please select the file to be restored and upload it. The file will be uploaded as cic.cfd and the data will be restored from it.
Browse...
Continue

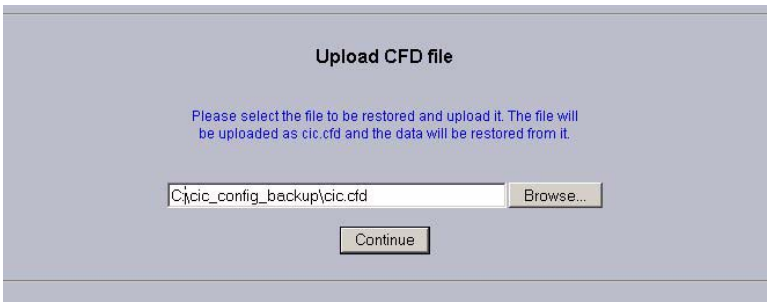
8. Click *Browse*. The *Choose file* window displays.

NOTE

Depending upon the operating system used to run the browser, the following download windows may be slightly different.



9. Navigate to the previously downloaded configuration file. Select the file and click *Open.* The path to the file displays in the *Upload CFD file* window.

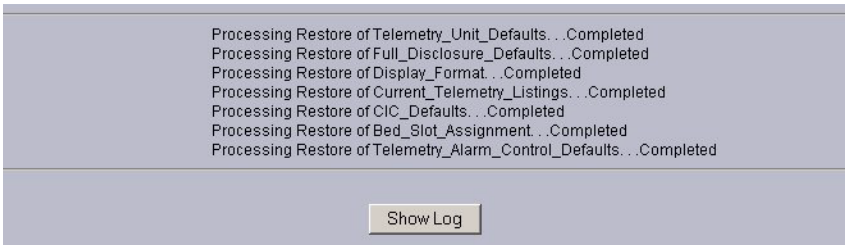

Upload CFD file
Please select the file to be restored and upload it. The file will be uploaded as cic.cfd and the data will be restored from it.
C:\cic_config_backup\cic.cfd
Browse...
Continue

10. Click *Continue*. The configuration file is uploaded to the *ConfigTool* directory on the CIC Pro.

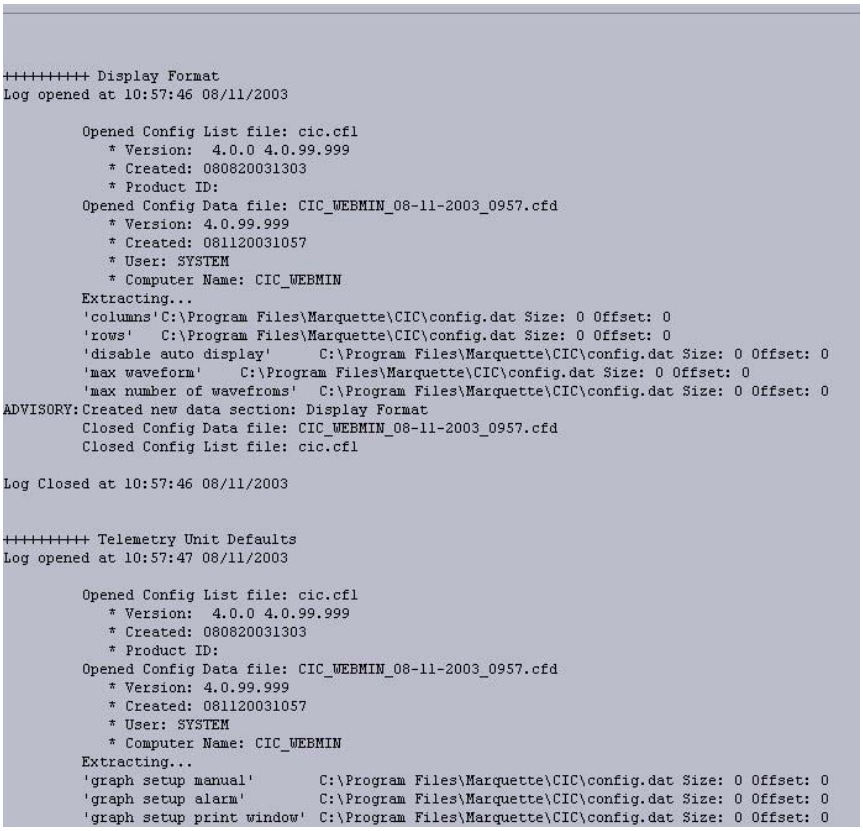
11. Click *Restore* to complete the configuration restore process. Progress of the restoration process is displayed.

NOTE

The CIC Pro application must be stopped before the configuration settings can be restored.


Processing Restore of Telemetry_Unit_Defaults. . .Completed
Processing Restore of Full_Disclosure_Defaults. . .Completed
Processing Restore of Display_Format. . .Completed
Processing Restore of Current_Telemetry_Listings. . .Completed
Processing Restore of CIC_Defaults. . .Completed
Processing Restore of Bed_Slot_Assignment. . .Completed
Processing Restore of Telemetry_Alarm_Control_Defaults. . .Completed
Show Log

12. Click *Show Log* to view a summary of the completed configuration restore process.



```
+++++++++ Display Format
Log opened at 10:57:46 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'columns'C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'rows'   C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'disable auto display'     C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max waveform'    C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max number of wavefroms'  C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
ADVISORY:Created new data section: Display Format
         Closed Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
         Closed Config List file: cic.cfl

Log Closed at 10:57:46 08/11/2003


+++++++++ Telemetry Unit Defaults
Log opened at 10:57:47 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'graph setup manual'       C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup alarm'        C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup print window' C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
```

13. Restart the CIC Pro application on the CIC Pro just restored.
14. Start up the other CIC Pros, one at a time. Common configuration data associated with the care unit is updated with data from the restored CIC Pro as the individual CIC Pros start back up.

Data Module Detail

The following table lists summary detail information associated with data modules listed as *Available Tools* in the *Backup-Restore CIC Configuration* window.

NOTE

Items marked with * are automatically updated by other CIC Pros running in a care unit.

Backup-Restore CIC Configuration Data Module Detail	
Data backed up/Restored	**Data Source**
Telemetry Alarm Control Defaults	
Parameter Limits*	Limits.def/Limits.mei
Parameter Alarm Levels*	Param.def/Param.mei
Arrhythmia Alarm Levels*	Arrhy.def/Arrhy.mei
System Alarm Levels*	System.def/System.mei
Full Disclosure Defaults	
Report Duration*	NewTelem.def
Report Hole Location*	NewTelem.def
Include Graybar*	NewTelem.def
Include Arrhythmia Annotations*	NewTelem.def
Include Heart rate*	NewTelem.def
Line Time*	NewTelem.def
Strip Duration*	NewTelem.def
Strip Hole Location*	NewTelem.def
Full Disclosure License*	NewTelem.def
Full Disclosure Offline Storage*	NewTelem.def
Start Data Storage*	NewTelem.def
Bedlist*	Fd.all
Display Format	
Columns	Config.dat
Rows	Config.dat
Disable Auto Display button	Config.dat
Maximize Waveform length	Config.dat
Maximize No. of Waveforms	Config.dat

Backup-Restore CIC Configuration Data Module Detail	
Data backed up/Restored	**Data Source**
Current Telemetry Listings	
Telemetry Bed List*	Telebeds.all
Hardwire Bed List*	Hardwire.all
Transmitter List*	Ttx.all
CIC Defaults	
Central Name	Config.dat
Unit Name	Config.dat
ECG1WaveForm	Config.dat
Waveform2	Config.dat
Waveform3	Config.dat
Waveform4	Config.dat
Laser Printer	Config.dat
DDW Printer	Config.dat
FullDisclosure Printer	Config.dat
Mirror Central Display	Config.dat
Alarm Volume	Config.dat
Browser Enabled	Config.dat
Browser Status	Config.dat
ColorSetECG0	Config.dat
ColorSetECG1	Config.dat
ColorSetECG2	Config.dat
ColorSetECG3	Config.dat
ColorSetECG4	Config.dat
ColorSetECG5	Config.dat
ColorSetECG6	Config.dat
ColorSetART	Config.dat
ColorSetPA	Config.dat
ColorSetFEM	Config.dat
ColorSetCVP	Config.dat
ColorSetRA	Config.dat
ColorSetLA	Config.dat

Backup-Restore CIC Configuration Data Module Detail	
Data backed up/Restored	**Data Source**
ColorSetICP	Config.dat
ColorSetSP	Config.dat
ColorSetUAC	Config.dat
ColorSetUVC	Config.dat
ColorSetRESP	Config.dat
ColorSetSPO2	Config.dat
ColorSetCO2	Config.dat
ColorOption	Config.dat
Central Name	Config.data
Telemetry Unit Defaults	
Graph Set Manual	Config.dat
Graph Setup Alarm	Config.dat
Graph Setup Print Window	Config.dat
Graph Setup ECG1*	Telem.def
Graph Setup Waveform2 *	Telem.def
Graph Setup Waveform3*	Telem.def
Graph Setup Waveform4*	Telem.def
Transmitter Graph*	Telem.def
Alarm Graph*	NewTelem.def
Nurse Call Graph*	NewTelem.def
Display Lead*	Telem.def
Arrhythymia*	Telem.def
Lead Analysis*	Telem.def
ST Analysis*	Telem.def
Va Lead*	NewTelem.def
Vb Lead*	NewTelem.def
Detect pace*	Telem.def
Patient Age*	Telem.def
Transmitter Alarm pause*	Telem.def
Alarm Pause Breakthrough*	NewTelem.def
PDT*	NewTelem.def

Backup-Restore CIC Configuration Data Module Detail	
Data backed up/Restored	**Data Source**
Transmitter Nurse Call*	NewTelem.def
Bed Slot Assignment	
Display Format	Config.dat
Beds Configured	Config.dat
Slot Information (From Slot 0 – Slot 32)	
Row, Column and Bed Name	Config.dat
Lead_or_site, position, scroll_speed	Config.dat
Colors	Config.dat
Bed Assignment	Config.dat
Lock Status	Config.dat

Checkout Procedures

About the Checkout Procedures

The checkout procedure process provides a method of verifying operational and functional performance without having to disassemble the unit. Failure to attain the prescribed results indicates a need for calibration, configuration, or repair of the equipment.

Perform the checkout procedures upon receipt of the equipment, every year thereafter, and each time a component is removed or replaced.

The checkout procedure process is based on the assumption that the equipment being tested is using known, good cables. It also requires that the user be familiar with the operation of the system. For more information concerning the operation of these components, refer to the CIC Pro operator manual.

Perform all of the checkout procedures included in this section to completely test the system for proper function and operation.

NOTE

Close all files before starting the checkout procedures.

General

1. Check the keyboard to make sure all of the keys work properly and do not stick when pressed. If any keys stick, or are otherwise non-functional, replace the keyboard.
2. Check the mouse to make sure the cursor follows mouse movements smoothly and the mouse buttons function properly. Refer to “Cleaning” on page 4-7 if necessary.

NOTE

Refer to the operating instructions packaged with the display monitor to complete the following step.

3. Check the monitor display screen, and if necessary, adjust for:
   - proper contrast and color (adjust for best viewing in the environment where the monitor is used)
   - proper screen focus
   - correct horizontal and vertical linearity
   - correct horizontal and vertical position

Disk Check

NOTE

The CIC Pro application must be shut down before running disk check. If the disk drive is in use, a message asks if you want to reschedule the disk check for the next time the system is restarted. Selecting this option will cause disk check to occur during the next restart.

Your disk drive will not be available to run other tasks while disk check runs.

WARNING

Beds displayed on the CIC Pro will not be monitored while the CIC Pro application is shut down. Additionally, beds admitted on a shutdown CIC Pro will display "NO COMM", when displayed at other stations.

To run disk check:

1. Log off the current CIC Pro user and log back on as administrator, according to "System Logons" on page 2-15.
2. Using *My Computer* or the Windows Explorer application, select the disk drive you want to check.
3. On the *File* menu, click *Properties*.
4. Select the *Tools* tab.
5. Under *Error-checking*, click *Check Now*.
6. Select both disk check options and click *Start*.

Audio Verification Test

WARNING

CIC Pro audible alarms will not sound for patients with bedside monitoring devices configured to "Operating Room" mode.

NOTE

Active alarms override this test.

To test audio output:

1. Select the Patient View window.
2. Select the *Alarm Control* tab.
3. Select the *Alarm Help* button.
4. Select the *Advisory Alarm* button.
5. Verify the audio tone plays through both speakers.
6. Select the *Close* button in the lower right corner of the screen.

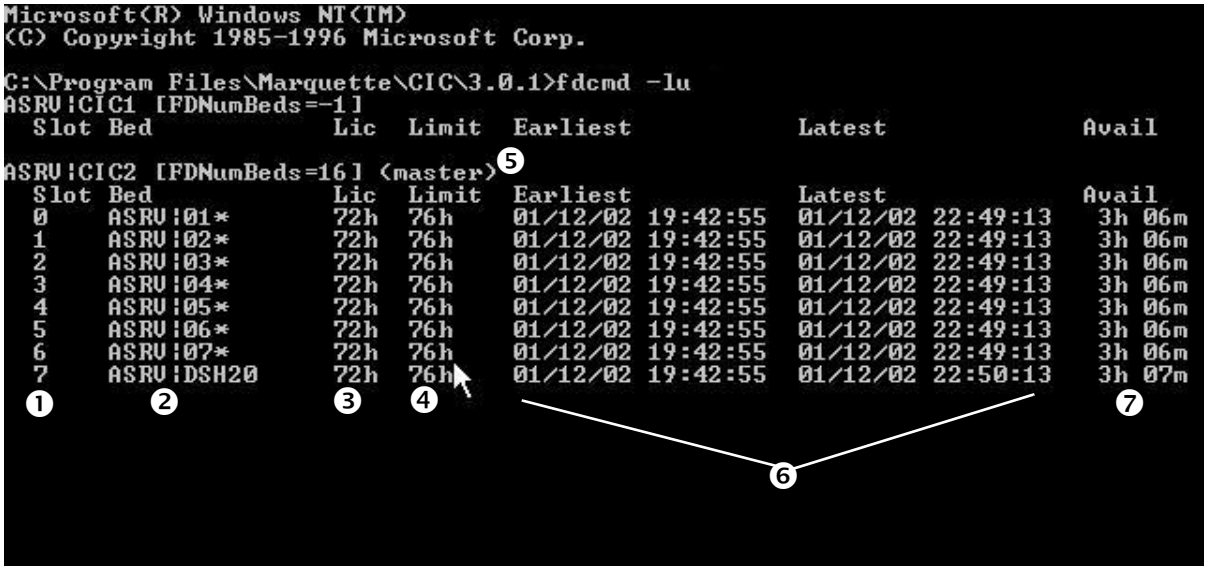
Verify Access to All Other Care Units

1. Select the Patient View window.
2. Select the *View Other* button.
3. Verify that the current list is complete.

Verify Full Disclosure

Verify that all admitted beds in the care unit are full disclosed with the correct license type.

1. Select *Setup CIC* > *Service Password* and type **mms_com**.
2. At the Windows command prompt, type **fdcmd -lu** and press the **Enter** key. The utility may take several seconds to execute (allow up to two minutes after boot up or after changing the Full Disclosure License type).
3. If the Full Disclosure Licenses type has been changed, verify that all the beds are being full disclosed, and that the correct license type is used for the admitted beds. Refer to the figure below for an explanation of the fdcmd -lu command.



❶	Up to 16 FD slots per CIC Pro.
❷	Shows Unit|Bed name of the bed being Full Disclosed.
❸	Identifies that a license was pulled from FlexLM and matches the Full Disclosure license type. 1hr is displayed if no licenses and Full Disclosure License type is set to NONE.
❹	Displays the maximum amount of time that data is available in the database.
❺	Identifies who is the FD Master within the care unit.

❻	Shows earliest and latest time of data collected. If the date is shown as 01/01/70, then data is not being collected. Run fdcmd –lu command again to view changes.
❼	Shows the amount of data collected thus far. In this example, only 3 hours of data is collected and it will max out at 76 hours.

Verify Each CIC Pro Can Print a Full Disclosure Report

1. View an admitted patient from the single viewer screen.
2. Select the *Full Disclosure* tab and verify waveforms appear.

   NOTE

   Full Disclosure data will not appear for approximately 2-minutes for newly admitted patients.

3. Select *Print Report* and modify the report for a one-page report, and select print.
4. Verify the Full Disclosure report printed out at the printer
5. Repeat the previous step for every CIC Pro within the unit.

CIC Service Tool

Perform all the service functions included in the CIC Service Tool. See "Service Tools" on page D-3.

Maintenance Checklist

Use the following checklist to ensure maintenance completion.

☐ "Visual Inspection" on page 4-6

1. ___ General
2. ___ Fans
3. ___ Connectors
4. ___ Cable Insulation

☐ "Cleaning" on page 4-7

1. ___ External Surfaces
2. ___ Internal Components
3. ___ Fans
4. ___ Keyboard
5. ___ Mouse
6. ___ Display Screen

☐ "Electrical Safety Tests" on page 4-10

1. ___ Wall Receptacle Test
2. ___ Ground Continuity Test
3. ___ Ground (Earth) Wire Leakage Current Tests
4. ___ Enclosure (Chassis) Leakage Current Tests

☐ "Backup-Restore CIC Configuration" on page 4-16

1. ___ Backup

☐ "Checkout Procedures" on page 4-28

1. ___ General
2. ___ Disk Check
3. ___ Audio Verification Test
4. ___ Verify Access to All Other Care Units
5. ___ Verify Full Disclosure
6. ___ General
7. ___ CIC Service Tool

Repair Log

A repair log is included for your convenience to record the repair history of the product.

Unit Serial Number: **Institution Name:**		
Date	**Maintenance/Repair**	**Technician**

Unit Serial Number: **Institution Name:**		
Date	**Maintenance/Repair**	**Technician**

5 Troubleshooting

For your notes

Blank Display, Unit Doesn't Boot

1. Verify the electrical outlet the CIC Pro is plugged into is operating properly.
2. Verify that all components are connected correctly.
3. Ensure that all cables are properly seated.
4. Shutdown, turn off and unplug the CIC Pro, follow all antistatic precautions according to "Controlling Electrostatic Discharge Damage" on page 4-5, remove the cover and ensure all internal components are properly seated.

Hardware Component Troubleshooting

NOTE

Also consult any additional documentation, supplied with each component of the system, for additional troubleshooting information.

Webmin Hardware Monitoring Utilities

CIC Pro Part/Serial Number Utility

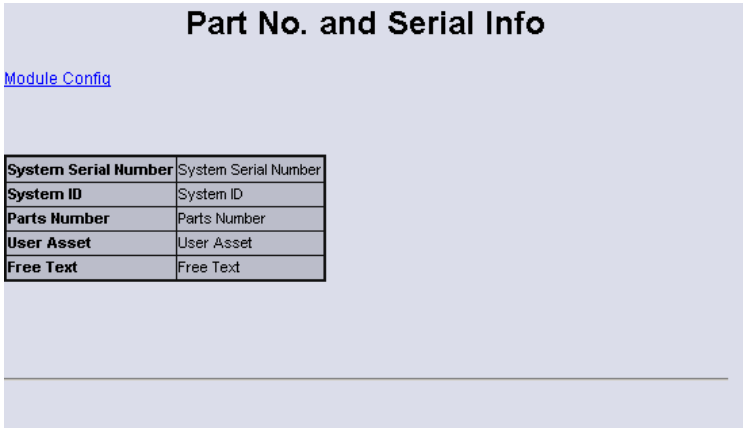
The Webmin part/serial number utility displays CIC Pro system ID, serial and part numbers, and asset information.

To use the part/serial number utility:

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Asset Management* link.
4. Click the *Part No. and Serial Info* button.

019A

5. CIC Pro part/serial number, system ID and asset information displays.



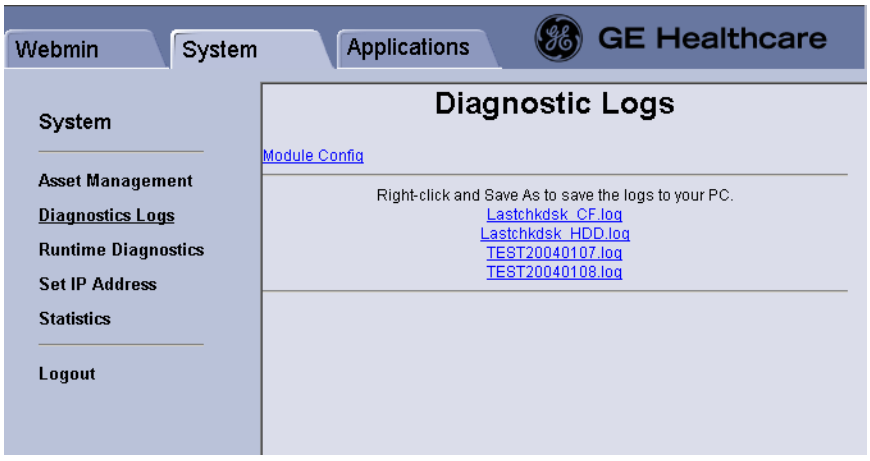
020A

Diagnostic Logs

The *Diagnostics Logs* page will have content only if diagnostic utilities were run previously.

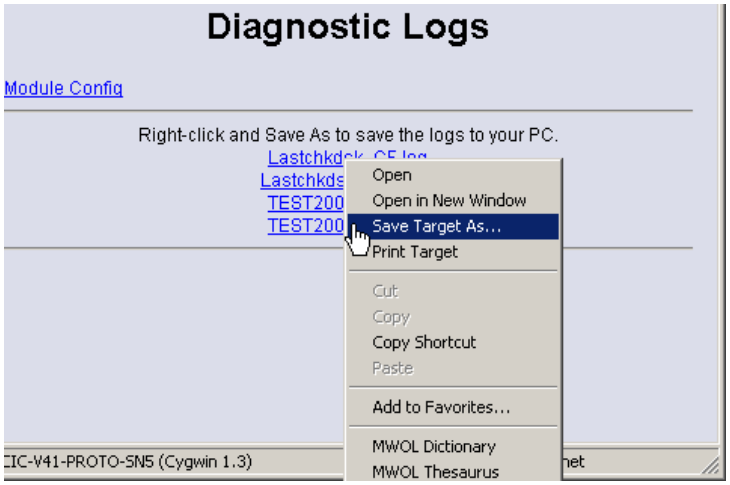
To download diagnostic logs:

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Diagnostic Logs* link.
4. Right-click the diagnostic log you want to download in the list.



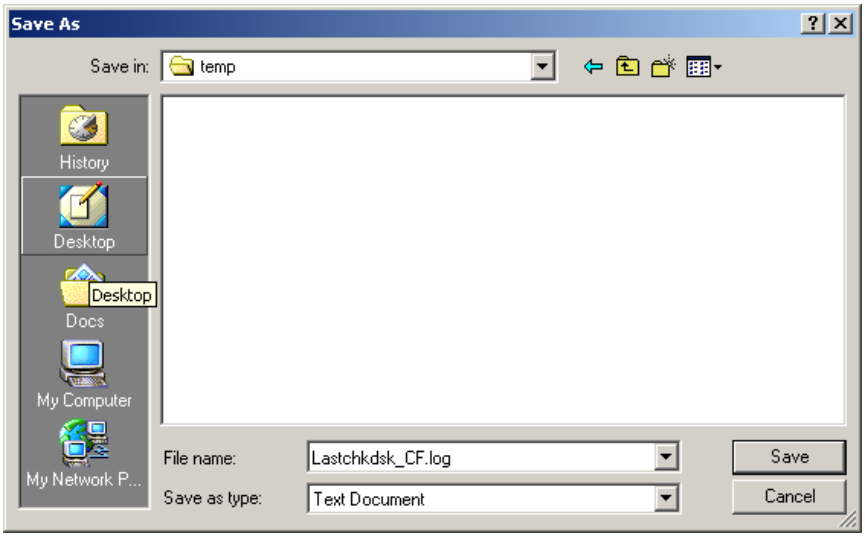
021A

5. Select *Save Target As* from the pop-up menu. The *Save As* window displays.



022A

6. Navigate to a location to save the log file, and type a name for the log, or accept the default. Click *Save*



023A

NOTE

Saved logs are written in text file format.

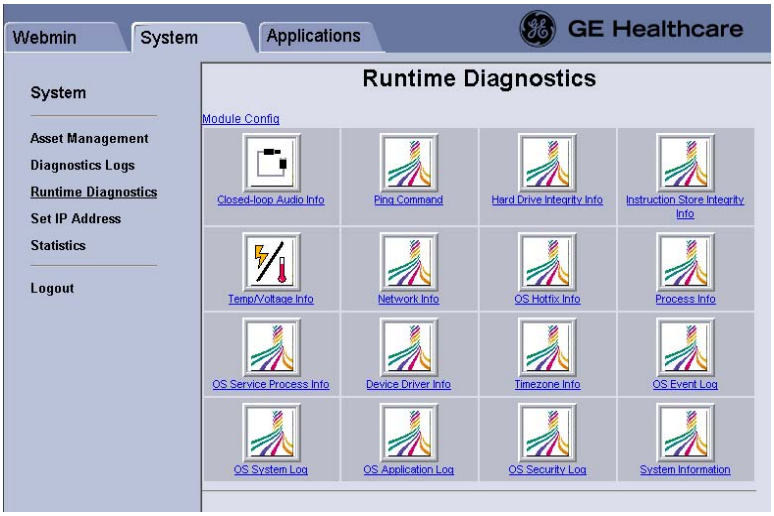
Runtime Diagnostics

Runtime diagnostics utilities provide several tools for viewing/troubleshooting a variety of system components. See "Webmin Runtime Diagnostics Utilities" on page C-1 for details about runtime diagnostics utilities.

To access the runtime diagnostics utilities:

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Runtime Diagnostics* link.

4. See "Webmin Runtime Diagnostics Utilities" on page C-1 for details about specific runtime diagnostics utilities.



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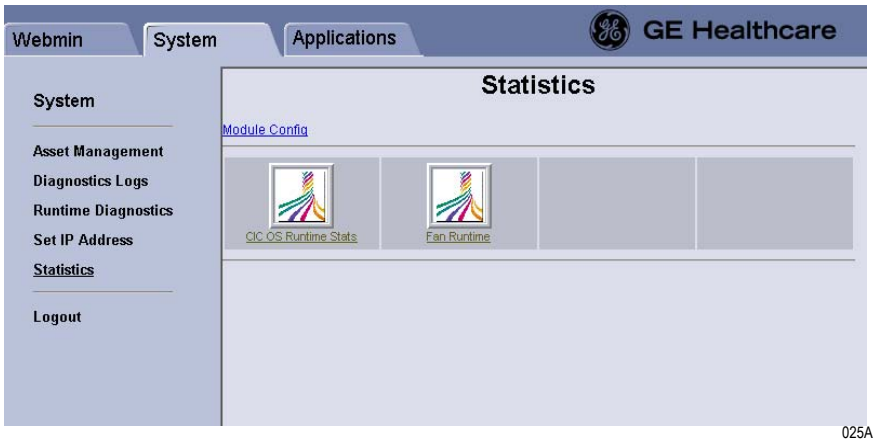
Fan Runtime Statistics

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Statistics* link.



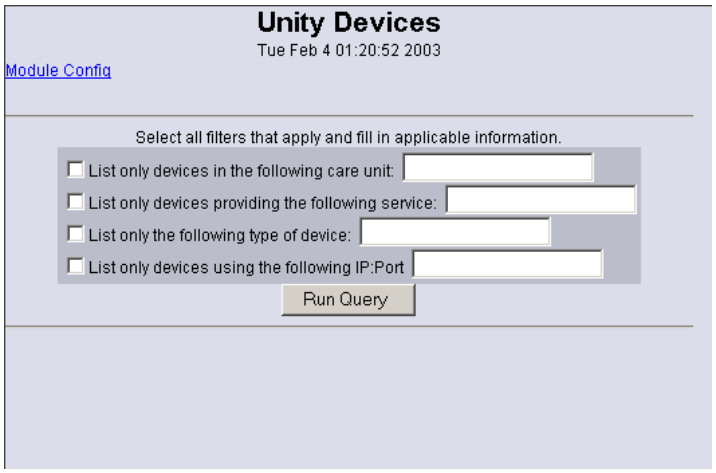
025A

Unity Devices

View a list of Unity devices connected to the Unity Network MC network using the following procedure:

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Asset Management* link.

4. Click the *Unity Devices* button. The *Unity Devices* window displays.


Unity Devices
Tue Feb 4 01:20:52 2003
Module Config
Select all filters that apply and fill in applicable information.
List only devices in the following care unit:
List only devices providing the following service:
List only the following type of device:
List only devices using the following IP:Port
Run Query

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5. Select/enter items, as desired, to configure the search.

   NOTE
   If no selections/entries are made, the search will display a list of all Unity devices found on the network.

6. Click the *Run Query* button.

The information displayed includes a list and summary of all devices communicating over the Unity Network MC network.

Also see "List Network" on page 5-13.

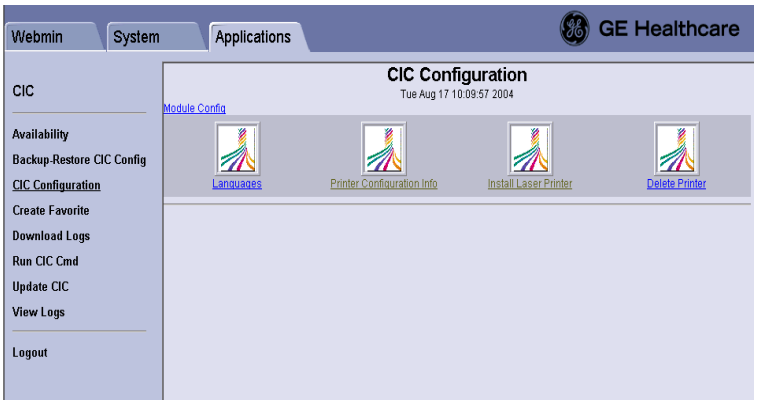
Printer Configuration Information

The printer configuration information utility allows you to view configuration of printers connected to the CIC Pro.

To use the printer configuration information utility:

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *Applications* tab.
3. Click the *CIC Configuration* link.

4. Click the *Printer Configuration Info* button.



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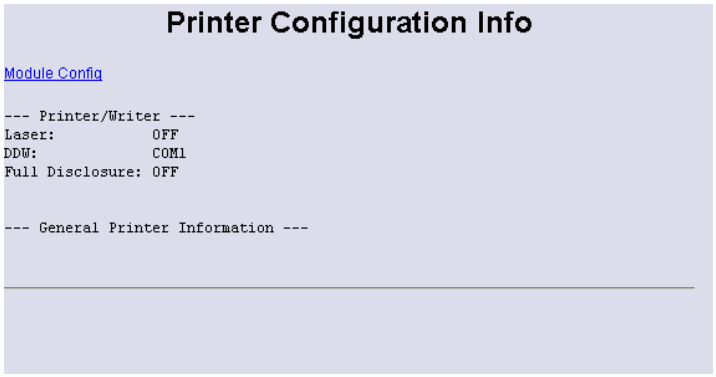
5. The *Printer Configuration Info* window displays.



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Software Component Troubleshooting

Webmin Software Monitoring Utilities

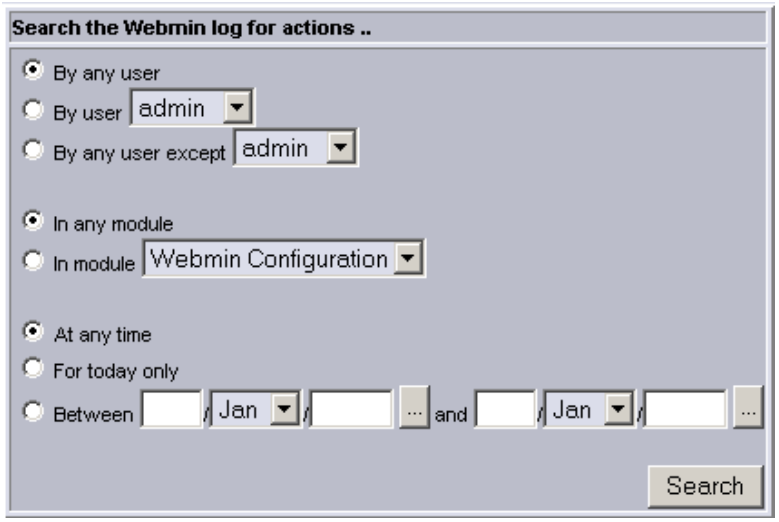
Webmin Actions Log

The *Webmin Actions Log* provides details about Webmin application access and use. The information can be filtered by user, module and date range.

To access the *Webmin Actions Log*:

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. If necessary, click the *Webmin* tab.
3. Click the *Webmin Actions Log* link.

The *Webmin Actions Log* search settings default to return all records from the actions log.


Search the Webmin log for actions ..
By any user
By user admin
By any user except admin
In any module
In module Webmin Configuration
At any time
For today only
Between / Jan / ... and / Jan / ...
Search

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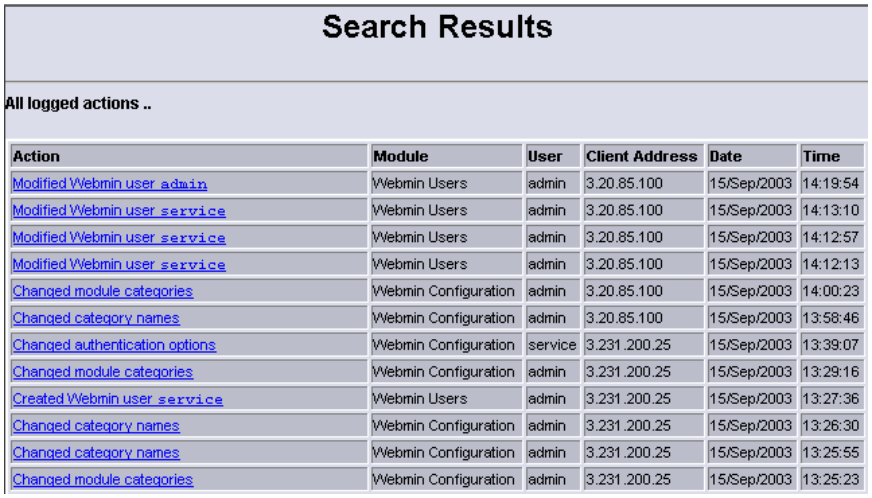
To filter/start a search:

1. Select one of the three *user* filter radio buttons, as desired, to either include or exclude specific users from the search results. Select from the drop-down lists, as appropriate, to limit the search to a specific user, or to exclude a specific user from the search.
2. Select one of the two *module* filter radio buttons, as desired, to either include all the modules in the search, or to limit the search to a specific module. If appropriate, select the module where you want to limit the search from the drop-down list.
3. Select one of the three date filter radio buttons, as desired, include all webmin access data in the search, to limit the search to the current day only, or to limit the search to a specific range of days. If appropriate, select the dates from the drop-down lists to specify the date range for the search.

4. Once the search filter selections/configurations are made, click *Search*. The associated search results display showing the logged action and the associated module, user, client IP address, and date/time of the action.



Search Results

All logged actions ..

Action	Module	User	Client Address	Date	Time
Modified Webmin user admin	Webmin Users	admin	3.20.85.100	15/Sep/2003	14:19:54
Modified Webmin user service	Webmin Users	admin	3.20.85.100	15/Sep/2003	14:13:10
Modified Webmin user service	Webmin Users	admin	3.20.85.100	15/Sep/2003	14:12:57
Modified Webmin user service	Webmin Users	admin	3.20.85.100	15/Sep/2003	14:12:13
Changed module categories	Webmin Configuration	admin	3.20.85.100	15/Sep/2003	14:00:23
Changed category names	Webmin Configuration	admin	3.20.85.100	15/Sep/2003	13:58:46
Changed authentication options	Webmin Configuration	service	3.231.200.25	15/Sep/2003	13:39:07
Changed module categories	Webmin Configuration	admin	3.231.200.25	15/Sep/2003	13:29:16
Created Webmin user service	Webmin Users	admin	3.231.200.25	15/Sep/2003	13:27:36
Changed category names	Webmin Configuration	admin	3.231.200.25	15/Sep/2003	13:26:30
Changed category names	Webmin Configuration	admin	3.231.200.25	15/Sep/2003	13:25:55
Changed module categories	Webmin Configuration	admin	3.231.200.25	15/Sep/2003	13:25:23

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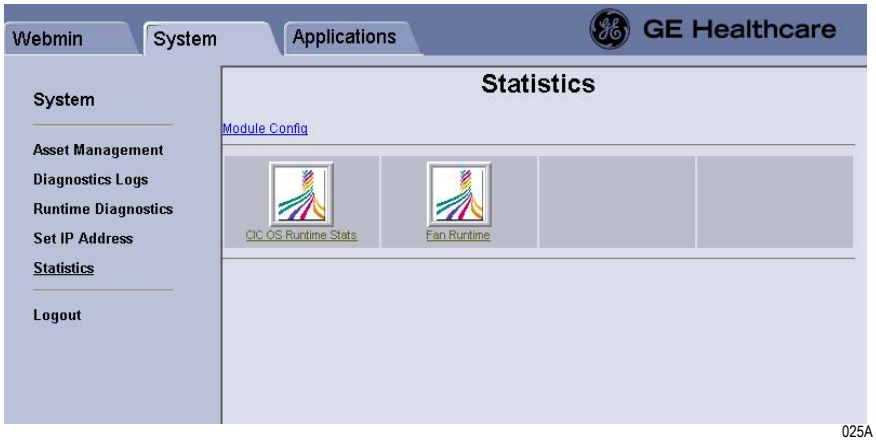
CIC Pro Operating System Runtime Statistics

The CIC Pro operating system runtime statistics utility displays the last time the operating system, and the CIC Pro program, were started, as well as real-time information about operating system and CIC Pro application status (running / not running)

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Statistics* link.
4. Click the *CIC OS Runtime Stats* button.



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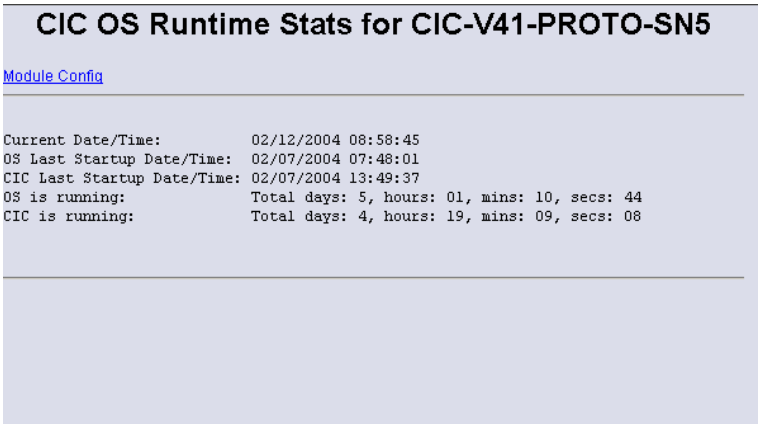
5. The *CIC OS Runtime Stats* window displays.


CIC OS Runtime Stats for CIC-V41-PROTO-SN5
Module Config
Current Date/Time: 02/12/2004 08:58:45
OS Last Startup Date/Time: 02/07/2004 07:48:01
CIC Last Startup Date/Time: 02/07/2004 13:49:37
OS is running: Total days: 5, hours: 01, mins: 10, secs: 44
CIC is running: Total days: 4, hours: 19, mins: 09, secs: 08

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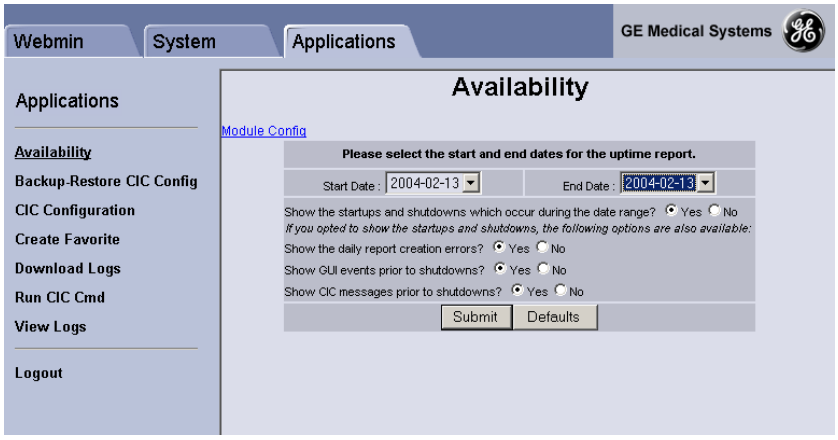
Availability (CIC Pro Uptime Report)

View the CIC Pro uptime availability and shutdown event history for a given period of time using the following procedure:

1. If necessary, login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *Applications* tab.
3. Click the *Availability* link. The *Availability* window displays.
4. Define the time limits for the uptime report data. Select the starting date from the *Start Date* drop-down list, and the ending date from the *End Date* list.


Webmin
System
Applications
GE Medical Systems
Applications
Availability
Backup-Restore CIC Config
CIC Configuration
Create Favorite
Download Logs
Run CIC Cmd
View Logs
Logout
Availability
Module Config
Please select the start and end dates for the uptime report.
Start Date : 2004-02-13
End Date : 2004-02-13
Show the startups and shutdowns which occur during the date range? Yes No
If you opted to show the startups and shutdowns, the following options are also available:
Show the daily report creation errors? Yes No
Show GUI events prior to shutdowns? Yes No
Show CIC messages prior to shutdowns? Yes No
Submit
Defaults

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5. Select either the *Yes* or *No startups and shutdowns* radio button:
   - *Yes* will include CIC Pro startup/shutdown information in the report
   - *No* will exclude this information.

NOTE

If the *startups and shutdowns No* radio button is selected, *daily report, GUI events, CIC messages* information will not be included in the report, regardless of the *Yes/No* radio buttons selected for these items.

6. If you selected the *Yes* radio button in the previous step, select either the *Yes* or *No* radio buttons as desired to either include or exclude the remaining availability information components (*daily report, GUI events, CIC messages*).
7. Click *Submit*.

Incorrect CIC Pro Application Colors

If the colors in the CIC Pro application are not correct, verify *High Color (16-bit)* is the *Color Pallet* selection in the *Settings* tab in the *Display Properties* Control Panel. For dual display, see "Dual Display Configuration" on page 3-13.

Browser Troubleshooting

A parsing defect in the Microsoft Internet Explorer browser can, in some cases, prevent access to certain sites. Also, the level of security present on the CIC Pro server prevents running applications from the Windows desktop taskbar. The combination of these two factors contribute to loss of browser function under certain circumstances.

Work-arounds for this are contained in the following sections.

Address Field Entries

In some cases, adding a forward slash (/) to the end of an internet address in the address field can allow access to a web page.

Specific Web Applications

MUSE Web Frame/No Frame Connection Errors

Button on the MUSE Web server introduction page allow you to select a display with, or without, frames. These buttons attempt to access a function disallowed by the CIC Pro.

Add the following suffixes to the MUSE Web address to bypass this problem:

Description	Suffix	Example
Frame (with borders)	Museweb.dll?InitializeDefaultPage?Frames=1	http://museserver1/Museweb.dll?InitializeDefaultPage?Frames=1
No Frame (without borders)	Museweb.dll?InitializeDefaultPage?Frames=0	http://museserver1/Museweb.dll?InitializeDefaultPage?Frames=0

Statview Administration Configuration Utility Connection Errors

No known CIC Pro browser connection problems are known to exist associated with the Statview Administration Configuration Utility. If problems are encountered, contact GE Medical Systems *Information Technologies* Technical Support.

Patient Viewer Version 1

The level of security present on the CIC Pro server currently prevents browser connection to Patient Viewer.

Other Connection Errors

If problems are encountered which are not included in this section, contact GE Medical Systems *Information Technologies* Technical Support. Reference MDOC724.

CIC Service Tool

The CIC Tool has functions useful for the troubleshooting process. See "Service Tools" on page D-3.

List Network

The list network function provides a list and summary of all devices that are communicating over the network.

To run the list network function:

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the service password prompt type **mms_com** and press **Enter**. A Windows command prompt window displays.
4. Type **lw**, and the following modifiers, as required:

   Example: **lw<Space>-d** and press **Enter**.

   lw [-d] [-s] [-u] [-a] [-l] [-c] [-q] [-h], where:

   -d <device> limits the search to <device> device types

   -s <service> limits the search to devices offering <service>

   -u <unit> limits the search to devices in <unit>

   -a <IP:port> limits the search to devices which have <IP:port>

   A "?" within any search string matches any character

   -l lists resource matches

   -c print a summary count of search results

   -q suppress printing of search criteria summary

   -h presents help screen

A typical listing would include the following data:

List Network				
IP Address	**Device Type**	**Secondary Address**	**Care Unit: Device Name**	**Patient Name**
126.0.17.206	TELE TOWER	(2000)	“SICU: TOWR7e0011	
126.0.17.206	TELE BED	(2001)	“SICU:214-A”	“JACKSON”
126.0.6.77	TRAMSCOPE	(2000)	“ICU:BED1”	“HUNTER”
126.0.6.61	TRAMSCOPE	(2000)	“ICU:BED4”	“BLAND”
126.0.177.21	CENTRAL	(2000)	“ICU:CS4”	

IP Address

IP addresses uniquely identifies each device on the network, whether the devices are manufactured by GE Medical Systems *Information Technologies*, or are part of the hospital information system.

Device Type

Includes:

CENTRAL: CIC Pro, Centralscope central station

MONITOR: Eagle, Solar, Tramscope monitors

MRT2: Monitoring Review Terminal 2

MUSE: MUSE system

TELE BED: Telemetry bed, CD, or APEX

TELE TOWER: Telemetry cabinet

Secondary Address

Identifies telemetry receivers in the cabinet assembly. Ignoring the base 2000 number, the last digit indicates which receiver is related to each telemetry bed. Identifies the receivers by numbers in the cabinet assembly.

Care Unit: Device Name

Identifies the device in terms more understandable to the user.

Patient Name

Identifies the currently monitored patient.

Duplicate TTX

During normal operation, the CIC Pro software does not allow you to enter duplicate transmitter TTX numbers when you admit a patient. Many problems could arise if two transmitters operating at the same frequencies are used in the telemetry system at the same time.

But there are circumstances where duplicate transmitters are useful, such as during telemetry system troubleshooting. This situation can occur when multiple CD Telemetry-LAN cabinets or a telemetry system has a failure. The simplest way to continue coverage of the patients lost during the failure is to move them to open receivers elsewhere on the telemetry system.

But if duplicate TTX numbers are not allowed in the system, it is impossible to admit the transferred patients. The duplicate TTX feature, however, overrides this limitation, allowing for duplicate TTX numbers. With duplicate TTX enabled, you can then admit the patients to the open receivers.

Once the option is enabled, the system allows the entry of duplicate TTX numbers for five minutes. When the five minute period expires, the software again prevents duplicate TTX number entry.

Admitted patients with duplicated TTX numbers are identified on the CIC Pro display. When the telemetry malfunction is repaired, the duplicated/transferred patients are then discharged and restored to the repaired receivers.

The normal state for this option is NOT ALLOWED.

To enable/disable the duplicate TTX function:

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the service password prompt type **mms_com** and press **Enter**.
4. At the command prompt, type:

   setflags<Space>-dup<Space>on and press **Enter** to allow duplicate TTX).
   setflags<Space>-dup<Space>off and press **Enter** to turn off duplicate TTX).

   NOTE
   Once you select this option, you have five minutes to enter the duplicate TTX numbers. If more time is necessary, select this option again.

During the five-minute period you can admit duplicate TTX numbers. Admission information can also be changed during this time.

Open RTERM Session

The remote terminal (RTERM) feature is similar to connecting a terminal directly to a remote device, except that the CIC Pro acts as the terminal and it is connected to the device through the network.

NOTE

You cannot use this function to log into another CIC Pro. It only allows you to log into CD Telemetry-LAN Cabinets or Centralscope Central Stations.

WARNING

Using the RTERM session option can cause other central stations to lose monitoring functions, patient data, or even the operating software. Only trained service personnel should use this option.

To run the RTERM function:

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the *service password* prompt type **mms_com** and press **Enter**. A Windows command prompt window displays.
4. Type the following command:

   rterm "UNIT|CENTRAL"

   where UNIT|CENTRAL is the fully specified UNITY Network device name.
5. Press **Enter**.

NOTE

Description of this option is beyond the scope of this manual. Specialized training in service monitor-level troubleshooting is necessary before you use this option. Consult with GE Medical Systems *Information Technologies* Service for information about the advanced training.

Event Logs

For more information about CIC Pro logs, and retrieving log files, refer to the following:

- "Download Logs (Webmin)" on page 5-19.
- "View Logs (Webmin)" on page 5-18.
- "CIC Pro Log File Description" on page 5-17.
- "getlog Function" on page 5-20.
- "MUSE Web Frame/No Frame Connection Errors" on page 5-12.

For information about other types of log files, refer to the following:

- "Diagnostic Logs" on page 5-4.
- "OS Event Log" on page C-15.
- "OS System Log" on page C-16.
- "OS Application Log" on page C-17.
- "OS Security Log" on page C-18.

CIC Pro Log File Description

Error Logs

CIC Pro records the occurrence of fatal and nonfatal errors in a user-readable error log.

Connection Logs

CIC Pro records the usage of each available communication channel by logging when a connection is established and which beds are viewed.

CIC Pro Log File Location/Naming

The CIC Pro log files are located in the following directory:

\Program Files\Marquette\CIC\Log

The naming convention for the log files is as follows:

yyyymmdd.log

For example: 20020422.log is the log file for April 22, 2002. There is one log file per day.

Log File Command Prompt Procedures/Functions

View Logs (Webmin)

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *Applications* tab.
3. Click the *View Logs* link.

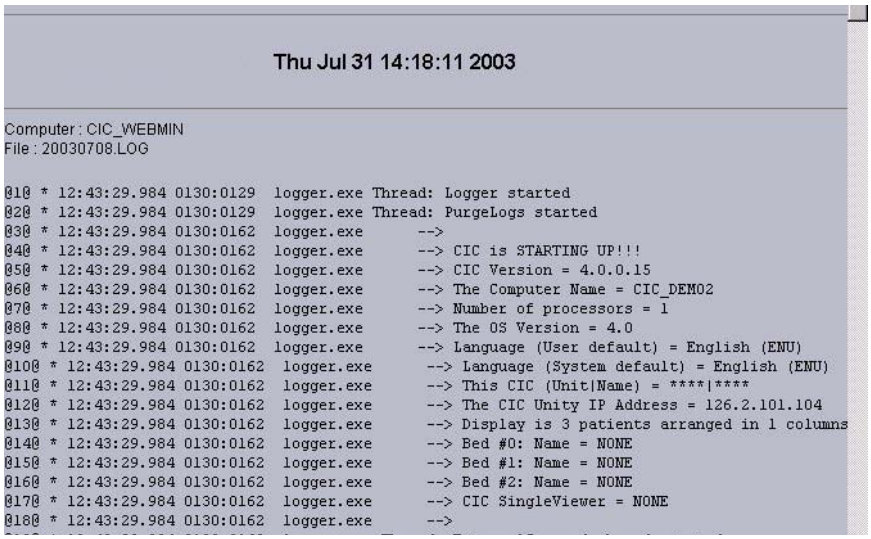
Computer : cicdev36
Fri Oct 10 08:50:12 2003
Select the CIC log files to view. Hold down the ctrl key while selecting multiple files. It is not necessary to select any CIC log files.
CIC Logs
20030916.LOG
20031010.LOG
Select Dr. Watson to view it. There is only one such file.
Dr Watson
drwtsn32.log
View Selected Files
Unselect All

4. Select the log files you want to view from the *CIC Logs* and/or *Dr. Watson* lists. Click *Unselect All* to deselect selected files.

NOTE

Ctrl + click to select multiple items from the lists.

5. Click *View Selected Files*. The selected log files display.


Thu Jul 31 14:18:11 2003
Computer : CIC_WEBMIN
File : 20030708.LOG
@1@ * 12:43:29.984 0130:0129 logger.exe Thread: Logger started
@2@ * 12:43:29.984 0130:0129 logger.exe Thread: PurgeLogs started
@3@ * 12:43:29.984 0130:0162 logger.exe -->
@4@ * 12:43:29.984 0130:0162 logger.exe --> CIC is STARTING UP!!!
@5@ * 12:43:29.984 0130:0162 logger.exe --> CIC Version = 4.0.0.15
@6@ * 12:43:29.984 0130:0162 logger.exe --> The Computer Name = CIC_DEM02
@7@ * 12:43:29.984 0130:0162 logger.exe --> Number of processors = 1
@8@ * 12:43:29.984 0130:0162 logger.exe --> The OS Version = 4.0
@9@ * 12:43:29.984 0130:0162 logger.exe --> Language (User default) = English (ENU)
@10@ * 12:43:29.984 0130:0162 logger.exe --> Language (System default) = English (ENU)
@11@ * 12:43:29.984 0130:0162 logger.exe --> This CIC (Unit|Name) = ****|****
@12@ * 12:43:29.984 0130:0162 logger.exe --> The CIC Unity IP Address = 126.2.101.104
@13@ * 12:43:29.984 0130:0162 logger.exe --> Display is 3 patients arranged in 1 columns
@14@ * 12:43:29.984 0130:0162 logger.exe --> Bed #0: Name = NONE
@15@ * 12:43:29.984 0130:0162 logger.exe --> Bed #1: Name = NONE
@16@ * 12:43:29.984 0130:0162 logger.exe --> Bed #2: Name = NONE
@17@ * 12:43:29.984 0130:0162 logger.exe --> CIC SingleViewer = NONE
@18@ * 12:43:29.984 0130:0162 logger.exe -->

Download Logs (Webmin)

NOTE

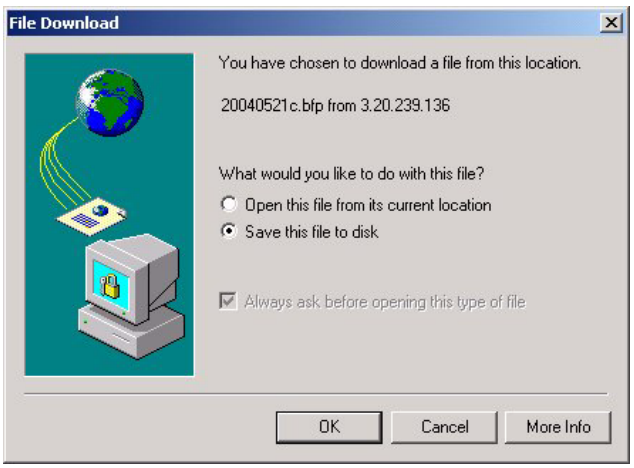
Download Logs only works when connecting from a networked, remote computer. It will not work locally at the CIC Pro.

1. Login to Webmin as described in "Webmin Overview" on page 2-17.
2. Click the *Applications* tab.
3. Click the *Download Logs* link.

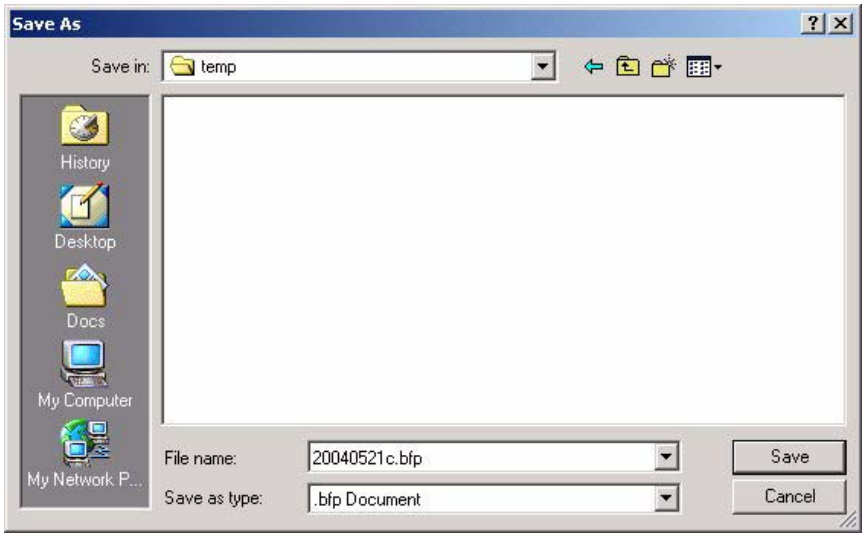
NOTE

At the end of each day, log files are compressed into.*bfp* files. Because of this, current day log files are uncompressed. Uncompressed files cannot be downloaded using the *Download Logs* window. To view and download current day log files, see "View Logs (Webmin)" on page 5-18.

4. Click a log you want to download. The *File Download* window displays.


File Download
You have chosen to download a file from this location.
20040521c.bfp from 3.20.239.136
What would you like to do with this file?
Open this file from its current location
Save this file to disk
Always ask before opening this type of file
OK
Cancel
More Info

5. Click to select the *Save this file to disk* radio button. Click *OK*. The *Save As* window displays.



6. Navigate to a location to save the log, and type a name for the logs, or accept the default. Click *Save*.

NOTE

Saved logs are compressed into a *.zip formatted file.

getlog Function

Once you locate the desired error log, you can copy the log over the network to another drive. Since error logs are text files, you can copy and read them into other computers using a text editor or a word processing application.

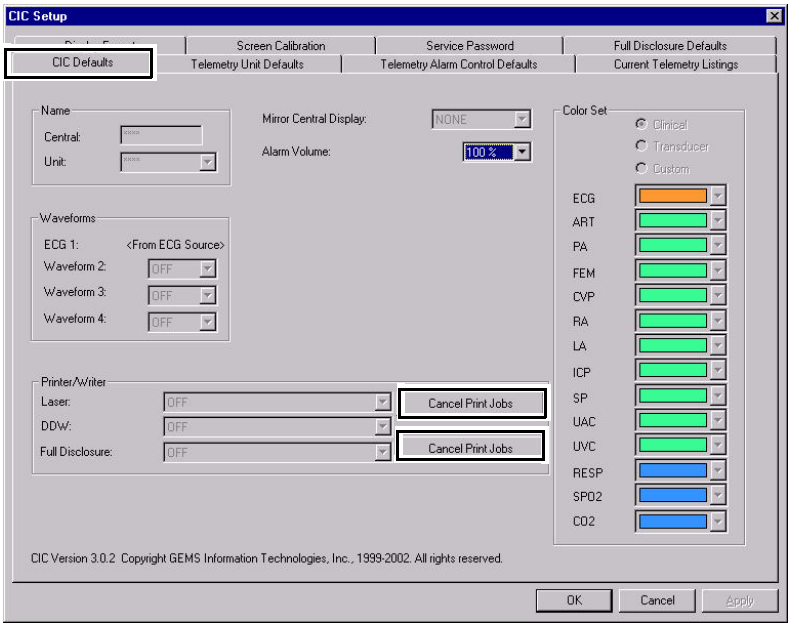
To retrieve the desired log files, use the *getlog* function as follows:

Usage: getlog<Space>[-n] [-s] [-d] [-t] [-p]

Function Descriptions		
Function		**Description**
getlog<Space>-n	[UNIT|]BED	Fetches logs from BED ('UNIT' is optional, 'BED' is mandatory).
getlog<Space>-s	YYYYMMDD	Starts on date *yyyymmdd* as in '19940428' (default is today's date).
getlog<Space>-d	#days	Number of days prior to start date (default is ALL available days).
getlog<Space>-t	type	Formats the output to a specific type (default is determined by device type): **1** - Tramscope Version 6 **2** - Tramscope Version 7 **3** - Tramscope Version 17 **4** - Eagle 3000 **5** - Eagle 4000 **6** - Eagle Tmp **7** - Type 1TTX:Dropout
getlog<Space>-p	[dev:]/path	Saves logs to dev:/path (default outputs logs to this device).

Canceling CIC Pro Print Jobs

Use the following procedure to cancel a print job from a CIC Pro:



1. Select *CIC Setup* at the bottom of the screen.
2. Click on the *CIC Defaults* tab.
3. Click the appropriate *Cancel Print Jobs* button.

NOTE

This only cancels print jobs originating locally from the CIC Pro. You cannot cancel print jobs originating from other CIC Pros on the network.

For your notes

6 Parts Lists, Drawings and Replacement

For your notes

Ordering Parts

The parts lists and drawings in this chapter supply enough detail for you to order parts considered field replaceable. If you require additional information, schematics, or troubleshooting assistance, contact Tech Support.

To order parts, contact Service Parts at the address or telephone number listed on the "How to Reach Us...," page found in the front of this manual.

Field Replaceable Units

Item Number	Item Description
2020183-002	FRU CIC Pro CPU
2020183-003	FRU CIC Pro Fan
2020183-004	FRU CIC Pro Dual Speakers
2020183-005	FRU CIC Pro Power Supply
2020183-006	CIC Pro 3AG 4A SB Fuses
2020183-007	FRU CIC Pro Hardware
2020183-008	FRU CIC Pro Front Bezel
2020183-009	FRU CIC Pro Light Pipe
2020183-010	FRU CIC Pro Hard Drive
80274-006	CORD PWR 125V 6FT STR
401855-001	PWR SPLY CRD RA CONT Euro 10A 250V 2.5M
401855-002	PWR SPLY CRD RA British 10A 250V 2.5M
401855-003	PWR SPLY CRD RA Italian 10A 250V 2.5M
401855-004	PWR SPLY CRD RA Israeli 10A 250V 2.5M
401855-005	PWR SPLY CRD ST Harness 10A 125V 2M
401855-006	PWR SPLY CRD ST Harness 10A 250V 2M
401855-007	PWR SPLY CRD RA Swiss 10A 250V 2.5M
401855-008	PWR SPLY CRD RA Indian 10A 250V 2.5M
401855-009	PWR SPLY CRD RA Danish 10A 250V 2.5M
401855-010	PWR SPLY CRD RA Australian 10A 250V 2.5M

FRU Installation/Field Replacement Procedures

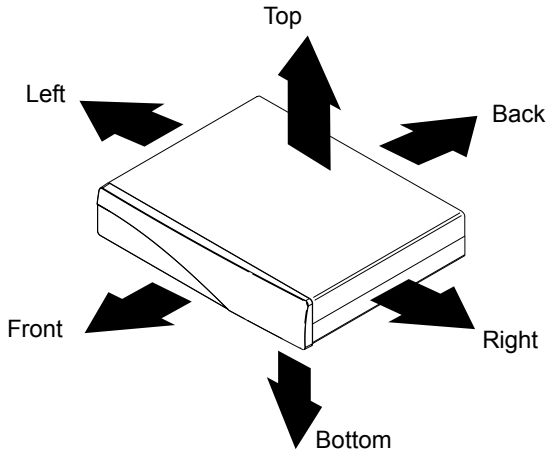
WARNING
PERSONAL INJURY/EQUIPMENT DAMAGE — FIRST complete "Field Replacement Preparation" on page 6-5 before performing any other procedure in this chapter. Failure to follow this instruction could result in serious injury or product/property damage.

Field replacement information for the following CIC Pro components are included in this chapter:

- "Fuses" on page 6-6
- "Cover" on page 6-8
- "Battery" on page 6-9
- "Hard Drive" on page 6-10
- "Fans" on page 6-12
- "CPU Board" on page 6-13
- "Power Supply" on page 6-16
- "Internal Speaker" on page 6-19

Orientation

The following figure illustrates front, back, left and right orientation referred to throughout the field replacement procedures.



Field Replacement Preparation

Only a qualified service technician should perform the procedures in this chapter. Observe these safety guidelines before opening the CIC Pro case.

1. Turn the CIC Pro off, and unplug the AC power cord from the back of the CIC Pro and from the wall outlet.

> **WARNING**
> The on/off button (a convex button) on the back panel does not turn off the system AC power. To remove power from the server, you must unplug the AC power cord from the wall outlet or power cord connector on the unit.
>
> The CIC Pro remains energized for a period of time after shutdown. Wait 30 seconds before proceeding.

2. Turn off all connected peripheral devices.
3. Label and disconnect all peripheral cables and telecommunication lines connected to the I/O connectors or ports at back of the server.
4. Always provide electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to the chassis ground of the system (any unpainted metal surface) whenever handling CIC Pro internal components.

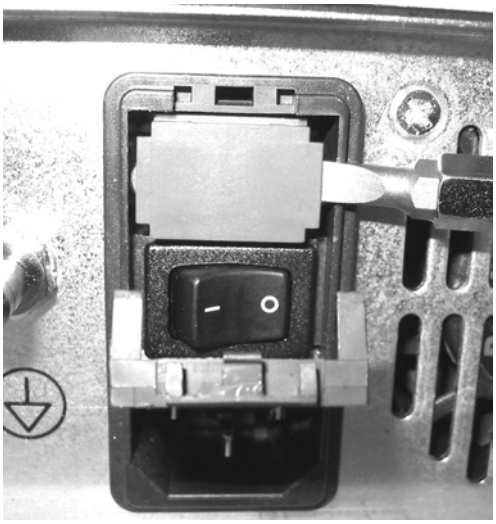
> **CAUTION**
> The CIC Pro is extremely static sensitive and should be handled as directed in "Controlling Electrostatic Discharge Damage" on page 4-5.

Fuses

1. Turn the CIC Pro off and remove the power cord from the unit.
2. Insert a flat-bladed screwdriver into the latch at the top of the fuse door and pry the door open.

047A

3. Insert a flat-bladed screwdriver under the lip in the fuse holder, pry the fuse holder loose and slide it out of the unit.

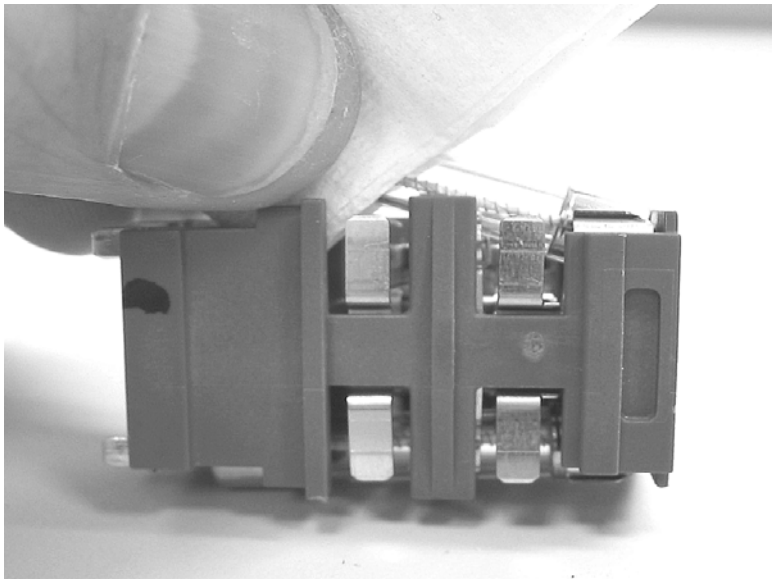


132A

4. Using gloves, a tissue, or a clean rag between your fingers and the fuses, remove the fuses from the fuse holder.

   NOTE

   Do not touch fuses with your bare hands. Oils/acids on your skin can greatly diminish fuse life.



056A

5. Examine both fuses. Replace any blown or damaged fuses.
6. Reverse the steps in this procedure to install the fan fuses.

Cover

WARNING
SHOCK HAZARD — Perform the "Electrical Safety Tests" on page 4-10 whenever replacing the cover. Whenever the cover is removed, the possibility of disrupting internal components is present, which presents the risk of disruption of proper power/ground connections. Potential for electrical shock exists if the proper tests are not conducted after the cover is replaced.

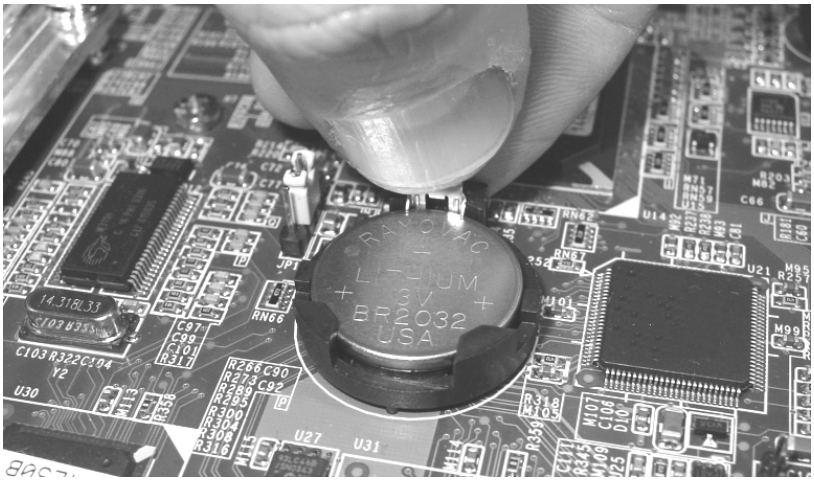
1. Complete "Field Replacement Preparation" on page 6-5.
2. Using a phillips screwdriver, remove the eight screws securing the cover on both sides and lift off the cover.

038A

3. To install the cover, reverse the steps in this procedure and complete the "Electrical Safety Tests" on page 4-10.

Battery

1. Complete “Field Replacement Preparation” on page 6-5
2. Remove the cover according to “Cover” on page 6-8.
3. Push the battery latch away from the battery until the battery pops loose and remove the battery.



052A

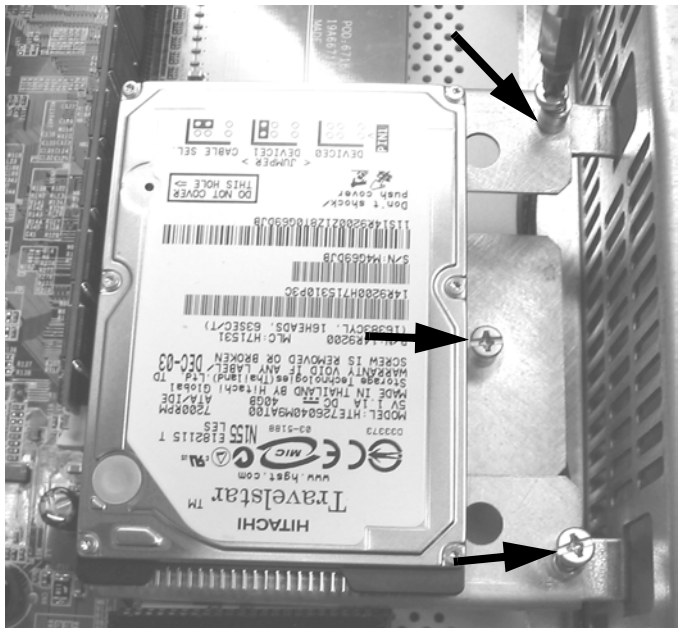
4. Reverse the steps in this procedure to install the battery.

Hard Drive

1. If possible, complete the backup procedure in "Backup-Restore CIC Configuration" on page 4-16 before continuing with this procedure.
2. Complete "Field Replacement Preparation" on page 6-5
3. Remove the cover according to "Cover" on page 6-8.
4. Disconnect the hard drive ribbon cable from the hard drive.

045A

5. Using a phillips screwdriver, completely loosen the 3 screws securing the hard drive bracket to the chassis and remove the hard drive and bracket.

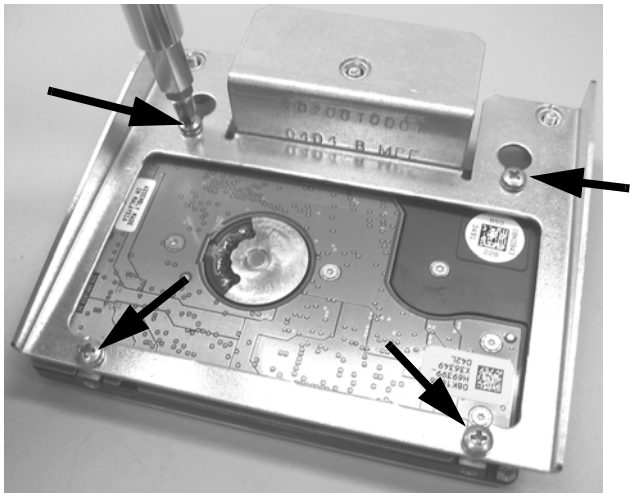


032A

6. Using a phillips screwdriver, loosen the 4 screws securing the hard drive to the bracket.

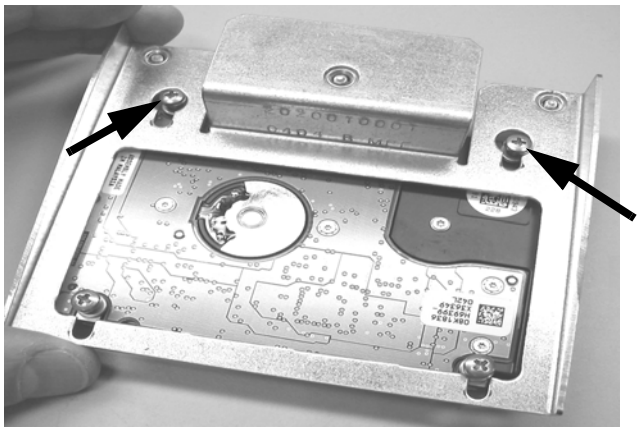
NOTE

7. Do not remove the screws. It is necessary only to loosen the screws enough to allow the hard drive to slip out of the bracket, as described in the next step.



050A

8. Slide the hard drive until the screws clear the holes in the bracket and remove the hard drive. For reassembly, note the position of any washers on the screws.



053A

9. Reverse the steps in this procedure to install the hard drive.
10. Perform the CIC Pro V4.1.x reload procedure according to the CIC Pro Clinical Information Center Software Reload Instructions.

CAUTION

EQUPMENT MALFUNCTION/DATA LOSS — Always perform both the compact flash and hard drive ghost procedures. Never perform one without the other. Equipment malfunction and/or data loss can occur if this instruction is not followed.

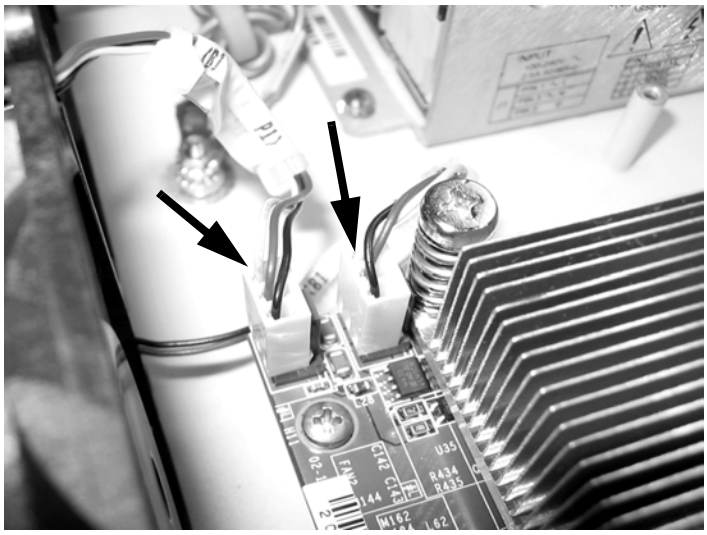
11. Complete "CIC Pro Application Configuration" on page 3-31.

Fans

NOTE

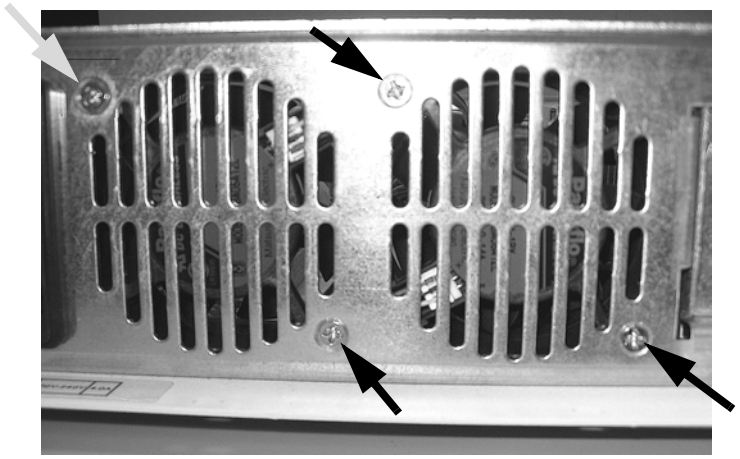
The CIC has 2 fans. References in this procedure to the "appropriate" fan is the fan to which the procedure is applied.

1. Complete "Field Replacement Preparation" on page 6-5
2. Remove the cover according to "Cover" on page 6-8.
3. Disconnect the appropriate fan power connector from the CPU board.



060A

4. Using a phillips screwdriver and an adjustable wrench, remove the appropriate 2 screws securing the fan to the back of the chassis and remove the fan.

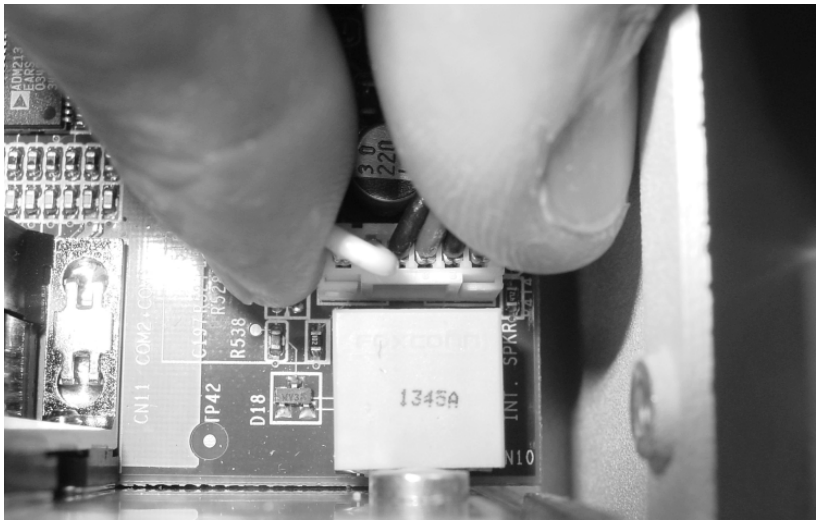


044A

5. Reverse the steps in this procedure to install the fan.

CPU Board

1. Complete “Field Replacement Preparation” on page 6-5
2. Remove all plugs from the CIC Pro back panel.
3. Remove the cover according to “Cover” on page 6-8
4. Disconnect the speaker connector from the back left corner of the CPU board.

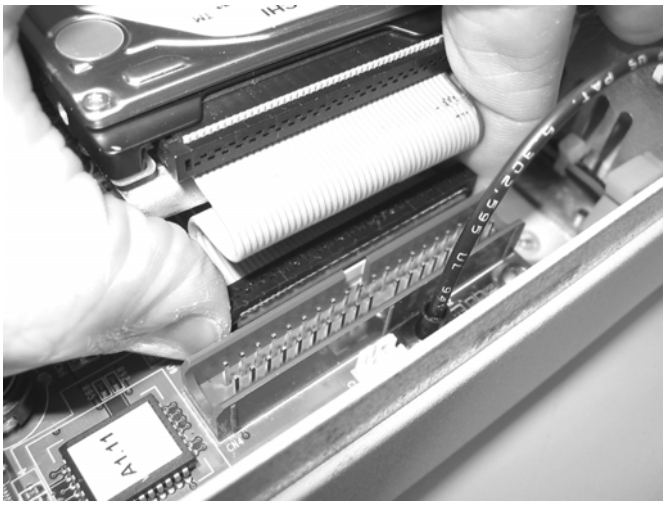


035A

5. Disconnect the light pipe from the front left corner of the CPU board.

062A

6. Disconnect the hard drive ribbon cable from the connector at the front left corner of the CPU board.

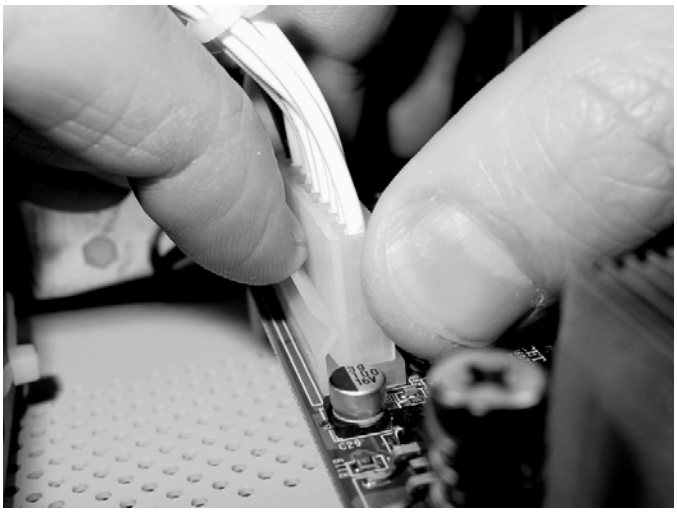


054A

7. Disconnect the power supply cable from the connector at the front right corner of the CPU board.

NOTE

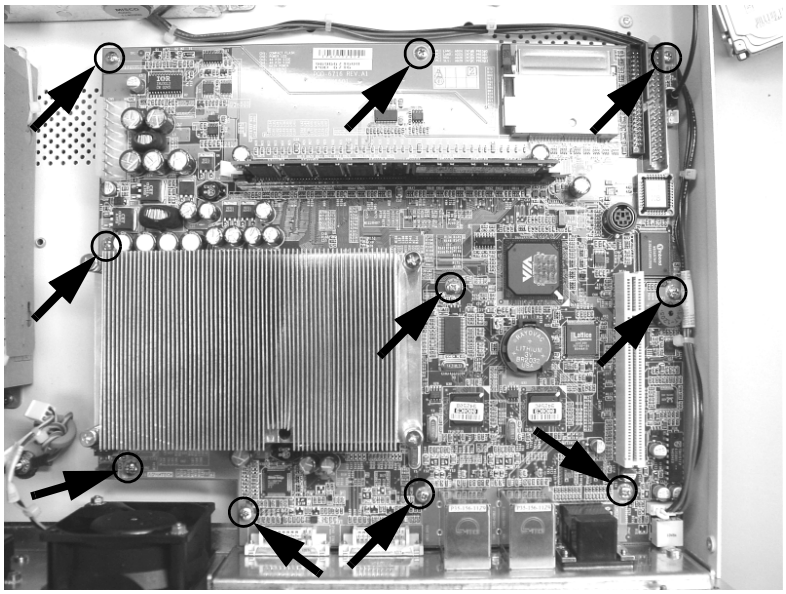
Pry back the retaining tab to free the connector. It may be necessary to use a flat-bladed screwdriver to pry back the tab.



064A

8. Remove the hard drive according to "Hard Drive" on page 6-10.

9. Using a phillips screwdriver, remove the 10 screws securing the CPU board to the bottom of the chassis.



034A

10. Using a phillips screwdriver, remove the 2 screws securing the CPU board to the back of the chassis.

031A

11. Remove the CPU board.
12. Reverse the steps in this procedure to install the CPU board.
13. Perform the CIC Pro V4.1.x reload procedure according to the CIC Pro Clinical Information Center Software Reload Instructions.

CAUTION

EQUPMENT MALFUNCTION/DATA LOSS — Always perform both the compact flash and hard drive ghost procedures. Never perform one without the other. Equipment malfunction and/or data loss can occur if this instruction is not followed.

14. Complete "Computer Name Configuration" on page 3-23.

Power Supply

WARNING
SHOCK HAZARD — Never touch components inside the power supply. There are no field serviceable components inside. Capacitors in the power supply present a shock hazard even with the power switched off.

1. Complete "Field Replacement Preparation" on page 6-5
2. Remove the cover according to "Cover" on page 6-8.

CAUTION
During CIC Pro operation, the power supply gets hot enough to cause severe burns. Allow the power supply and insulation shield to thoroughly cool after shutting down the CIC Pro, before touching the power supply.

3. Disconnect the connector at the front of the power supply at the right front of the chassis.

NOTE
Pry back the retaining tab on the back of the socket to free the connector. It may be necessary to use a flat-bladed screwdriver to pry back the tab.

051A

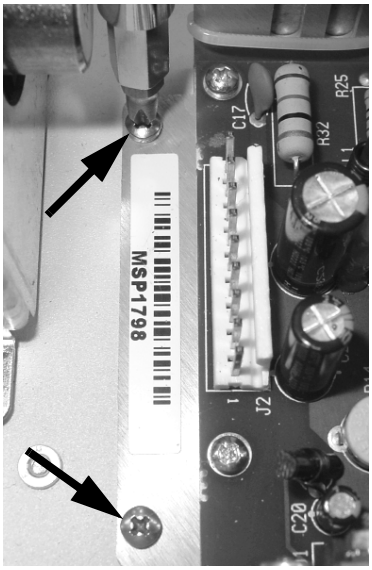
4. Disconnect the connector at the back of the power supply at the right back of the chassis.

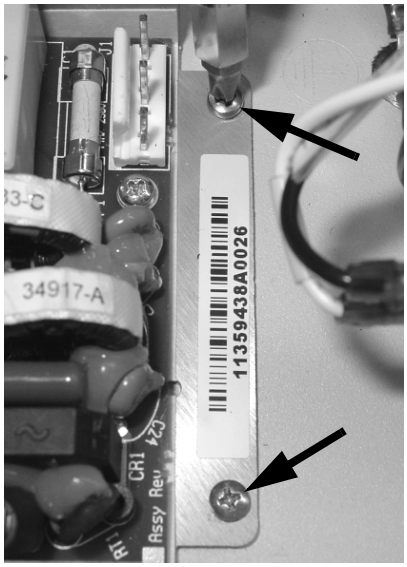
NOTE

Pry back the retaining tab on the back of the socket to free the connector. It may be necessary to use a flat-bladed screwdriver to pry back the tab.

048A

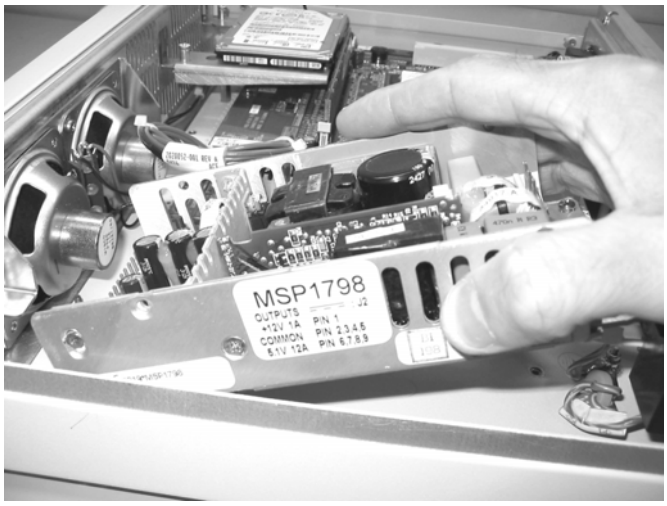
5. Using a phillips screwdriver, remove the 4 screws (2 in back and 2 in front) securing the power supply to the chassis.





057A, 058A

6. Remove the power supply.

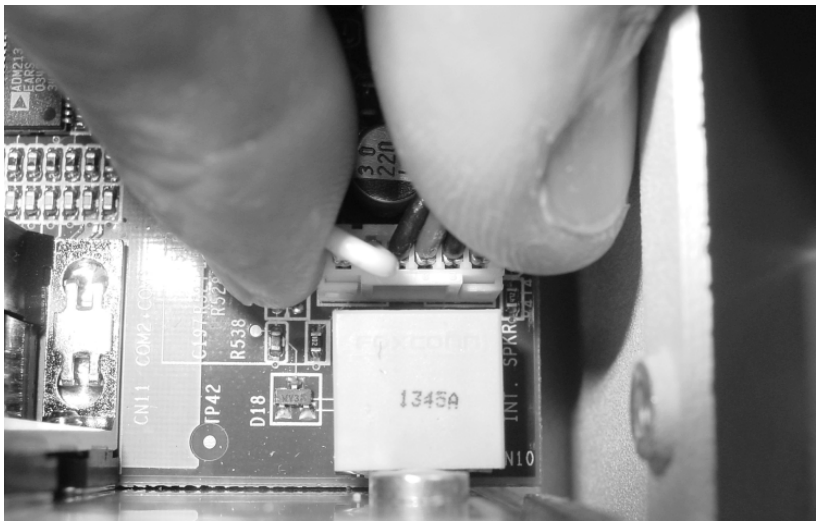


055A

7. Reverse the steps in this procedure to install the power supply.

Internal Speaker

1. Complete "Field Replacement Preparation" on page 6-5
2. Remove the cover according to "Cover" on page 6-8.
3. Disconnect the speaker connector from the socket at the back left corner of the CPU board.



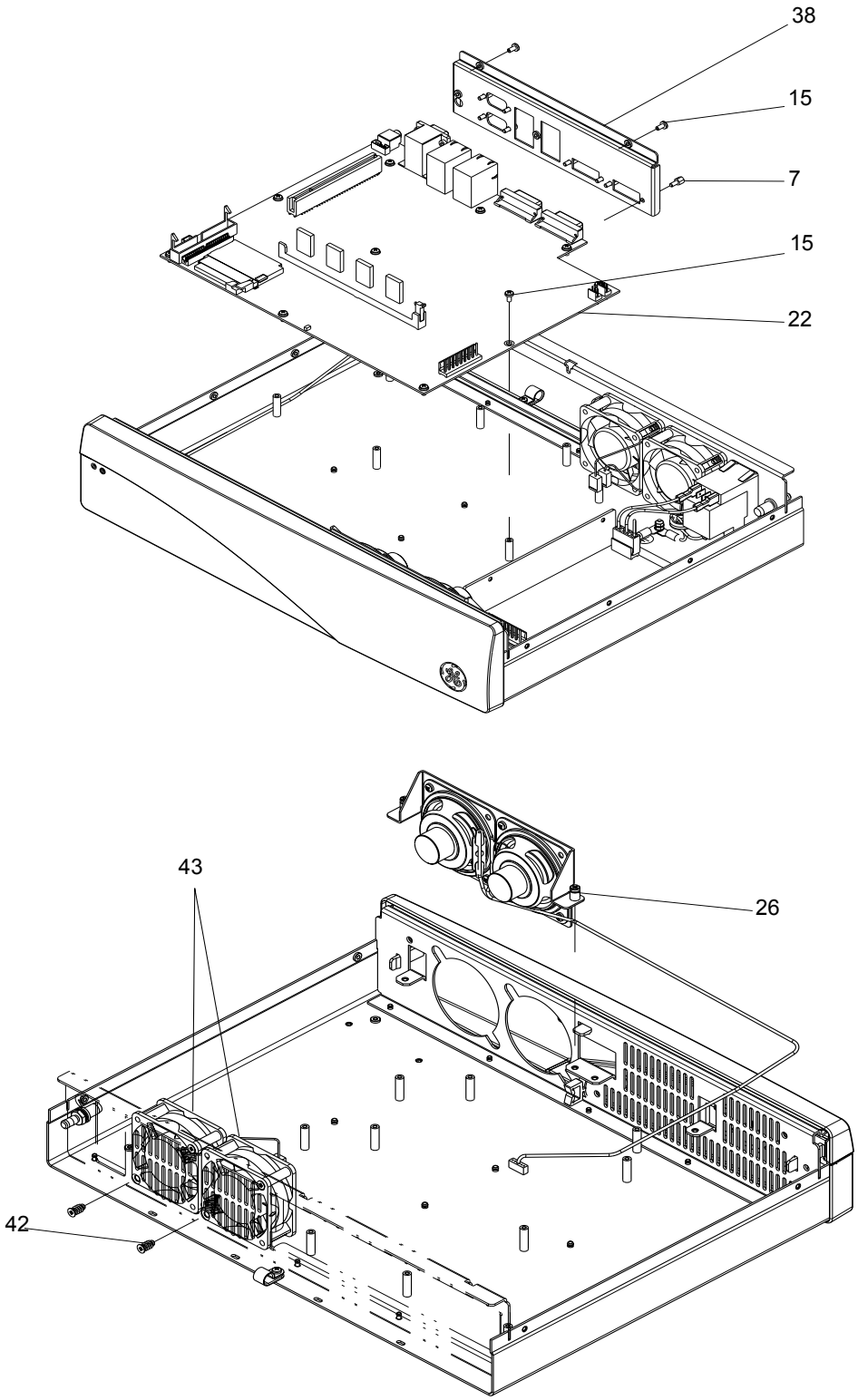
035A

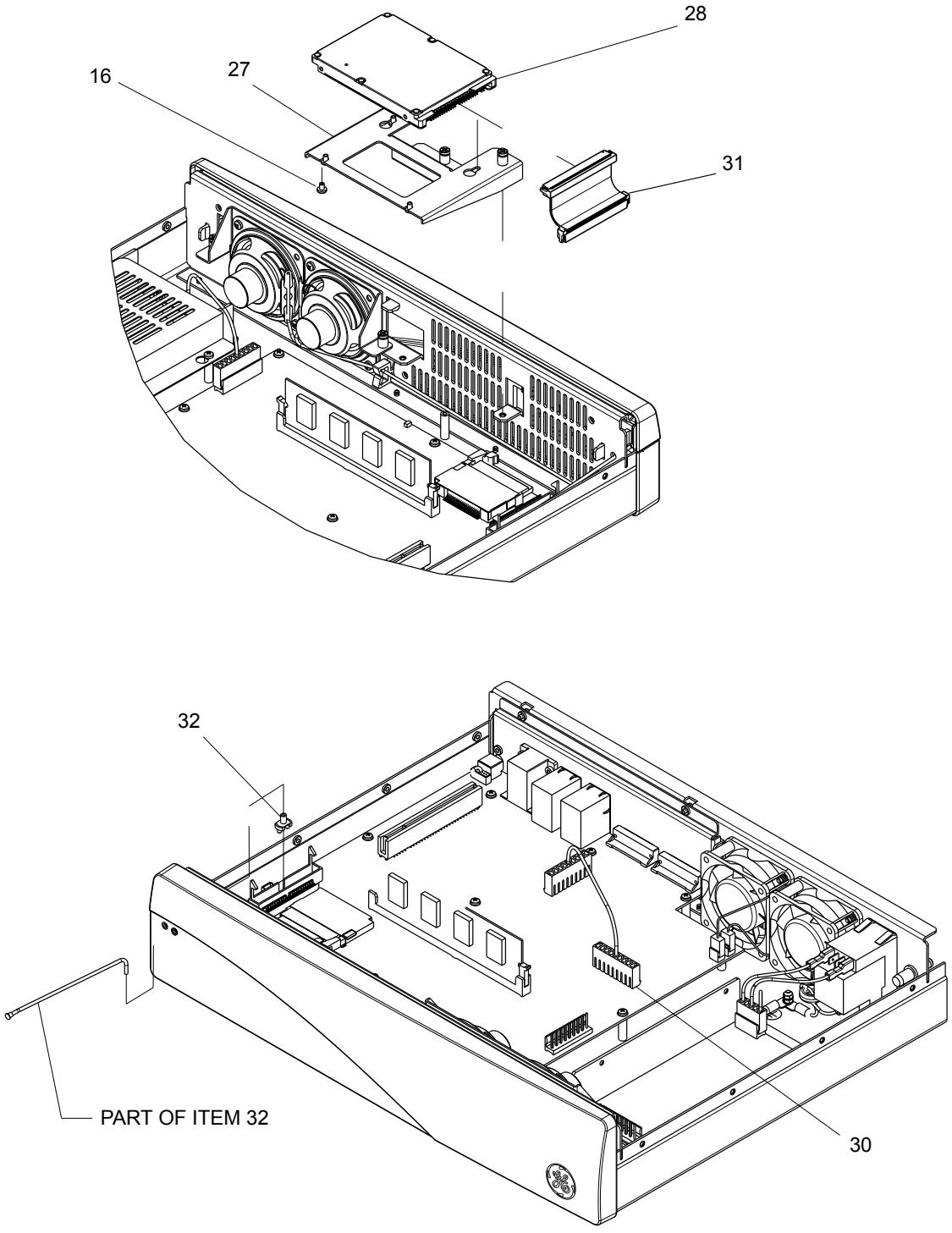
4. Using a phillips screwdriver, completely loosen the 2 screws securing the speakers to the chassis and remove the speakers.

040A

5. Reverse the steps in this procedure to install the speakers.

CIC Pro Parts List

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PART OF ITEM 32
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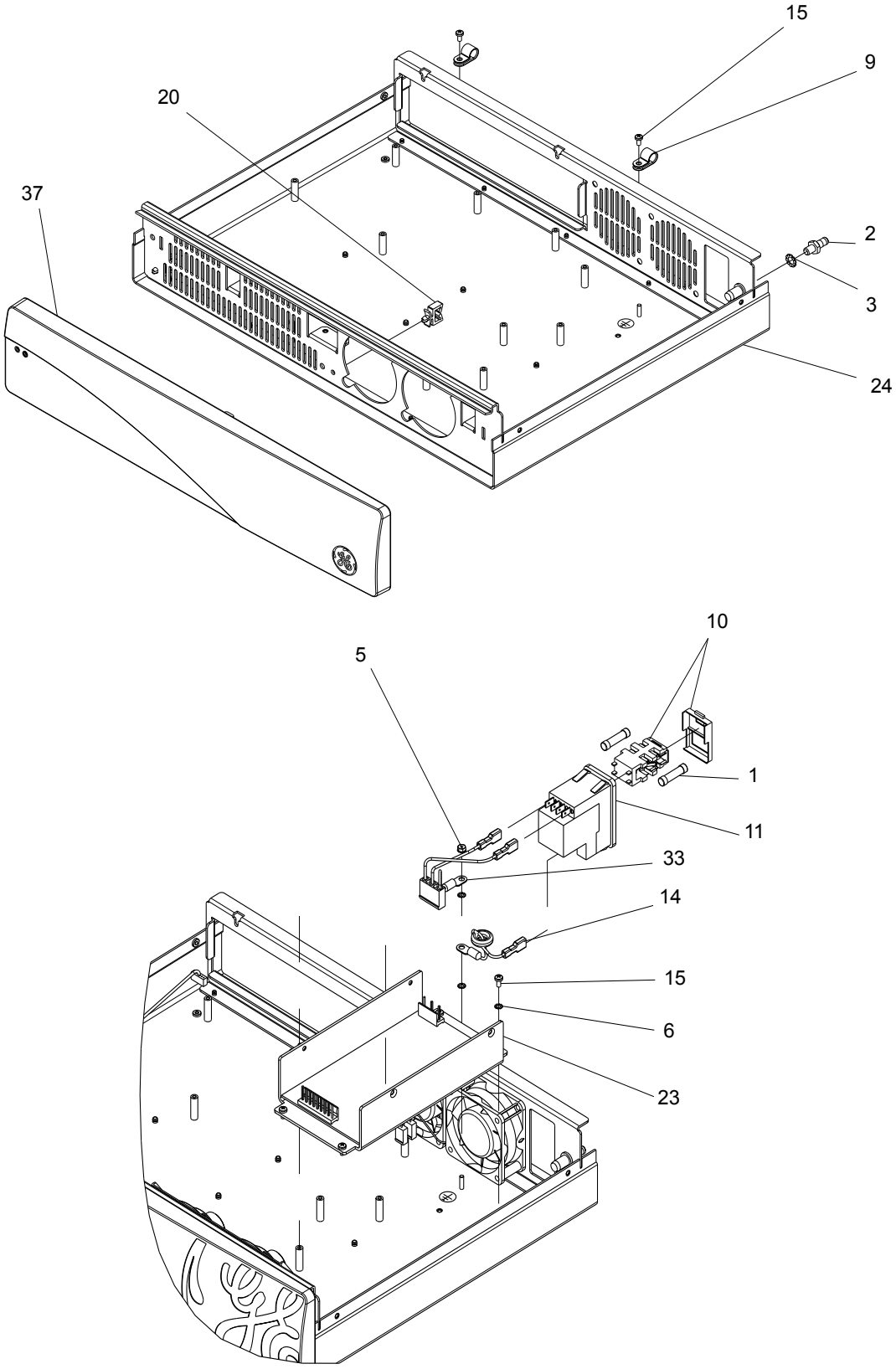
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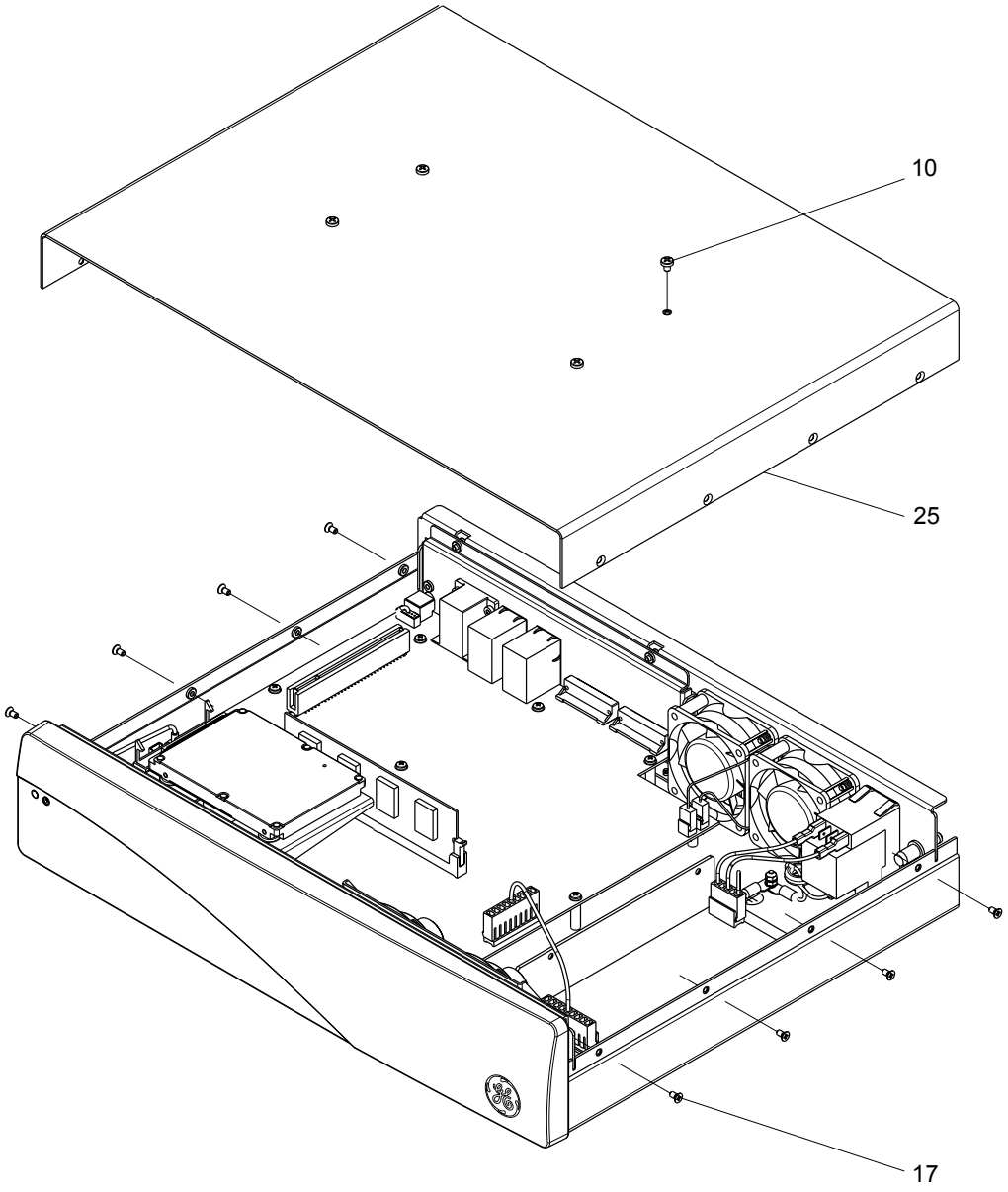

10
25
17

Item Number	Part Number	Description	Qty
1	2020183-006	CIC Pro 3AG 4A SB Fuses	N/A
2		PLUG M6 EQUIPOTENTIAL	1
3		WASHER LOCK SERRATED F/M-6	1
5		NUT HEX KEPS M3 - .5 CLASS 8 ZP	1
6		WASHER LOCK M3 EXT TOOTH	2
7		JACKSCREW 4-40X.18 W/VIBRATITE	8
9		CLAMP CABLE	2
10		SCR SL BDGH 6-32 X 3/16 NYLON	4
11		AC INLET MDL CONN/SW/DUAL FZ	1
14		CBL ASM 9500 PWR INLET CHOKE	1
15		SCR MACH PNHD M3X6LG SST W/THD LOCK	19
16		SCR MACH PNHD M3X4LG SST W/THD LOCK	4
17		SCR MACH FLHD M3 X 6MM SS N8.25 GRAY	4
20		CLIP SNAP-LOK 13X4.8 SADDLE	2
22	2020183-002	FRU CIC Pro CPU	N/A
23	2020183-005	FRU CIC Pro Power Supply	N/A
24		CHASSIS CIC PRO	1
25		COVER CIC V4.1	1
26	2020183-004	FRU CIC Pro Dual Speakers	N/A
27		BRACKET CIC PRO HARD DRIVE MNT	1
28	2020183-010	FRU CIC Pro Hard Drive	N/A
30		CABLE ASSY CIC PRO POWER	1
31		CABLE ASSY CIC V4.1 HARD DRIVE	1
32	2020183-009	FRU CIC Pro Light Pipe	N/A
33		CABLE ASSY CIC PRO AC POWER	N/A
34		CABLE ASSY CIC PRO FAN	2
35	2020183-008	FRU CIC Pro Front Bezel	N/A
38		PANEL ASM CIC PRO CPU I/O	1
42		SCR FAN SELF-TAPPING FLHD	4
43	2020183-003	FRU CIC Pro Fan	N/A
	2001099-114	MNL OPR CIC V4 ENG	1

Item Number	Part Number	Description	Qty
	2001099-157	CD SVCE CIC PRO V4.1 ENG	1
	2001323-001	KOSS HDM/5 COMPUTER SPEAKERS	1

Optional Components

Item Number	Item Description
2022144-002	USB Mouse Optical scroll lighted
XXXXXX-XXX	USB KEYBOARD KIT (see "Keyboard Kits" on page 6-26)
422310-001	MOUSE PAD GE
2006550-001	ADAPTER DB9F TO RJ-45
420650-009	ADAPTER VGA TO DVI-A
2011097-083	KIT SERVICE CICV4.1 SOFTWARE RELOAD
2011097-084	KIT UPGRADE CIC PROV4.1ENG
2011097-085	KIT UPGRADE CIC PROV4.1SWE
901136-(001-005)	4 to 1 keyboard/mouse switch box w/ extension cables ranging from 10 ft. – 100 ft
CIC18CFP	18" NEC color flat panel display
CIC20CFP	20" NEC color flat panel display
FPD18ADT-PS	18" color touchscreen display
901125-001	Video splitter drives up to 3 slaves with either an additional primary display or an additional VDA
2001099-114	MNL OPR CIC V4 ENG
2001099-157	CD SVCE CIC PRO V4.1 ENG
2001323-001	KOSS HDM/5 COMPUTER SPEAKERS
2022038-001	PWR SPLY UPS 600VA 120 VOLTS
2022038-002	PWR SPLY UPS SMK 600VA 220 VOLTS
2022038-003	PWR SPLY UPS SMK 2000VA 120 VOLTS

Keyboard Kits

Item Number	Item Description	Item Number	Item Description
2012217-021	KYBD KIT CIC USB ENG US	2012217-034	KYBD KIT CIC USB WIN95-SWED/FIN
2012217-022	KYBD KIT CIC USB WIN95-BELGIAN	2012217-030	KYBD KIT CIC USB WIN95-SWISS
2012217-023	KYBD KIT CIC USB WIN95-DANISH	2012217-031	KYBD KIT CIC USB WIN95-CZECH
2012217-024	KYBD KIT CIC USB WIN95-ENG EU	2012217-032	KYBD KIT CIC USB WIN95- DUTCH
2012217-025	KYBD KIT CIC USB WIN95-ENG UK	2012217-033	KYBD KIT CIC USB WIN95-RUSSIAN
2012217-026	KYBD KIT CIC USB WIN95-FRENCH	*	KYBD KIT CIC USB WIN95-SLOVENIA
2012217-027	KYBD KIT CIC USB WIN95-GERMAN	*	KYBD KIT CIC USB WIN95-CHINESE
2012217-035	KYBD KIT CIC USB WIN95-ITALIAN	*	KYBD KIT CIC USB WIN95-JAPANESE
2012217-028	KYBD KIT CIC USB WIN95-NORWEGIAN	*	KYBD KIT CIC USB WIN95-POLISH
2012217-036	KYBD KIT CIC USB WIN95-PORTUGUESE	*	KYBD KIT CIC USB WIN95-HUNGARIAN
2012217-029	KYBD KIT CIC USB WIN95-SPANISH		

*Contact GE Medical Systems *Information Technologies* for part number information.

A Technical Specifications

For your notes

Technical Specifications–CIC Pro

Due to continual product innovation, GE Medical Systems *Information Technologies* designs and specifications are subject to change without notice.

Performance Specifications

Performance Specifications	
Number of Patients	1 to 16 in standard display format, 1 to 17 in “view patient” format
Display Format	User selectable for up to 16 patients per display
Displayed Wavelengths	3.5 – 11 seconds, dependent on configuration choice
Display Information	Access to complete patient information including: real-time patient waveforms & monitored parameters, arrhythmia histories, graphic trends, tabular vital signs and full disclosure waveforms & parameter data.
Full Disclosure Display	9 waveforms, all parameters. 1 hour standard, licensed storage includes 24, 48 and 72 hour storage.

Controls

- USB Compatible Keyboard
- USB Compatible Mouse

Processing

Main Processor: Intel Plll ULV 933 MHz ULV w/512 kB L2 cache

Printers

- 2” External Digital Writer (PRN 50/PRN 50-M)
- Laser Printer

Alarms

Alarms	
Patient Status Alarms	4 Levels: Crisis, Warning, Advisory and Message
System Alarms	3 Levels: Warning, Advisory and Message
Notification	Audible, visual, graph runs, and history storage (dependent on level), alarm display button to view alarming beds
Display of Alarm Information	Alarm information located in waveform window, parameter box and alarm display buttons
Silencing	Current patient alarms silenced for 1 minute via alarm silence button or alarm silence key on keyboard. Alarm silence notification icon in parameter box.
Display of Limits	All parameter limits available

Recorder (optional)

- 2-inch external Direct Digital Writer (PRN 50/PRN 50-M)
- Laser printer

General

Storage	512 MB RAM; CD-ROM drive, 40 GB hard drive (with or without Full Disclosure); 1 GB EIDE Compact Flash
Software Updates	Via network connection
Serial Outputs	RS232 9 pin DB9 serial ports (two)
Parallel Output	IEEE 1284 Standard
USB	USB Type A connectors (four - two reserved for keyboard/mouse)
Network Connectivity	Unity Network MC network--real-time monitoring; Unity Network IX network--Unity information exchange network
Video Output	Onboard high resolution dual video ATI chip video board, 1280 x 1024 @ 75 Hz; 16-bits per pixel, supporting 16.7 million or true 24-bit color. DVI-A connection.
Audio Output	Integral audio controller; GE Medical Systems *Information Technologies* supplied speakers required

Environmental Specifications

Power Requirements	Input Range: 100-240V. Frequency: 50-60 Hz Input Current: 4.0 A
Power Consumption	50 watts (max) 5V±5% supply (10 Amps maximum) +12V +/- 5% (1 Amp maximum)
Fuse Rating	3AG 4A SB/250V~
Cooling	Forced air 28CFM
Operating Environment Specifications	+0°C (+32°F) to +50°C (+122°F) Rate of change not to exceed 10°C/Hr Maximum Altitude: 3,000 meters (10,000 ft) Relative Humidity: 10% -90% RH non-condensing
Non-operating Storage Environment Specifications	+70°C (+158°F) for 84 hours -20°C (-4°F) for 4 hours Maximum Altitude: 12,000 meters (40,000 ft); Relative Humidity: 10% - 90% RH non-condensing
Storage Pressure	500 kPA to 1060 kPA

Physical Specifications

Physical Specifications	
Height	42 cm (16.6 inches)
Depth	20 cm (7.9 inches)

Physical Specifications	
Width	48 cm (18.9 inches)
Weight	11.35 (25 lbs.)

Display Specifications

Display Specifications	
Display Size	17 to 21 inch diagonal, color CRT 18 or 20 inch color flat panel
Dot Pitch	.028 mm maximum
Resolution	1280 x 1024 @ 75 Hz
Electrical	
Input Voltage Range	Auto-ranging for either 85 – 130 VAC/60 Hz, 1.7 Amps, or 190 – 270 VAC/50 Hz, 1.2 Amps
Controls	On/Off, Brightness, Contrast
Environmental	
Operating Temperature	10 to 40°C
Humidity	10 to 90% (non-condensing)

Monitor (Display) Connections

Variety of interconnect video cables available.

Certification

UL/CSA/CE certification as required per the original equipment manufacturer (OEM).

For your notes

B Supported CIC Pro Parameters

For your notes

Arterial Blood Gas (POC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
pH	PH	--	--	--	--	Yes
Partial Pressure CO2	PCO2	--	--	--	--	Yes
Partial Pressure O2	PO2	--	--	--	--	Yes
Bicarbonate	HC03	--	--	--	--	Yes
Temperature	Temp	--	--	--	--	Yes
Base Excess Blood	Beb	--	--	--	--	Yes
Transcutaneous CO2	TCO2	--	--	--	--	Yes
Base Excess Extracellular Blood	Beeb	--	--	--	--	Yes
O2 Staturation	O2Sat	--	--	--	--	Yes
Hematacrit	HCT	--	--	--	--	Yes
Hemoglobin	Hb	--	--	--	--	Yes
Potassium	Ka	--	--	--	--	Yes
Blood Urea Nitrogen	BUN	--	--	--	--	Yes
Sodium	Na	--	--	--	--	Yes
Chloride	Cl	--	--	--	--	Yes
Calcium	Ca	--	--	--	--	Yes
Barometric Pressure	BP	--	--	--	--	Yes
Glucose	Gluc	--	--	--	--	Yes

Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Peripheral Pulse Rate	PPR	--	Yes	Yes	Yes	Yes

* - As 1 waveform

BIS Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Suppression Ratio	SR	--	Yes	--	--	Yes
Signal Quality Index	SQI	--	Yes	--	--	Yes
Bi-spectral Index	BIS	--	Yes	--	--	Yes
Electromyograph	EMG	--	Yes	--	--	Yes

Cardiac Calculations (Cardiac Calcs)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Cardiac Output	CO	Yes	Yes	--	--	Yes
Heart Rate	HR	Yes	Yes	Yes	Yes	Yes
Mean Arterial Pressure	MAP	--	--	--	--	Yes
Central Venous Pressure	CVP	--	--	--	--	Yes
Pulmonary Artery Mean	PAM	--	--	--	--	Yes
Pulmonary Artery Wedge	PAW	--	--	--	--	Yes
Body Surface Area	BSA	--	--	--	--	Yes
Cardiac Index	CI	--	--	--	--	Yes
Stroke Volume	SV	--	--	--	--	Yes
Systemic Vascular Resistance	SVR	--	--	--	--	Yes
Systemic Vascular Resistance Index	SVRi	--	--	--	--	Yes
Pulmonary Vascular Resistance	PVR	--	--	--	--	Yes
Pulmonary Vascular Resistance Index	PVRi	--	--	--	--	Yes
Left Ventricular Stroke Work Index	LVSWi	--	--	--	--	Yes
Right Ventricular Stroke Work Index	RVSWi	--	--	--	--	Yes

Cardiac Output (CO)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Cardiac Output	CO	--	Yes	--	--	Yes
Blood Temperature	BT	--	Yes	Yes	Yes	Yes

Central Venous Pressure (CVP)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Blood Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Cerebral Perfusion Pressure (CPP)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Blood Pressure	Mean	--	Yes	--	--	Yes

Continuous Cardiac Output (CCO)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systemic Venous Oxygen	SVO2	--	Yes	Yes	--	Yes
Blood Temperature	BT	--	Yes	--	--	Yes
Continuous Cardiac Index	CCI	--	Yes	--	--	Yes
Cardiac Output	CO	--	Yes	--	--	--
Cardiac Index	CI	--	Yes	--	--	--
Systemic Vascular Resistance	SVR	--	Yes	--	--	Yes
Systemic Vascular Resistance Index	SVRi	--	Yes	--	--	Yes
Continuous Cardiac Output	CCO	--	Yes	--	--	Yes
Signal Strength	Signal Strength	--	Yes	--	--	--

CO2 Parameter

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Carbon Dioxide (Expired/Inspired)	CO2e/CO2i	--	Yes	Yes	Yes	Yes
Oxygen (Expired/Inspired)	O2e/O2i	--	Yes	Yes	Yes	Yes

ECG Parameters

Parameter	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
I	Yes	--	Yes*	--	--
II	Yes	--	Yes*	--	--
III	Yes	--	Yes*	--	--
AVR	Yes	--	Yes*	--	--
AVL	Yes	--	Yes*	--	--
AVF	Yes	--	Yes*	--	--
V1	Yes	--	Yes*	--	--
V2	Yes	--	Yes*	--	--
V3	Yes	--	Yes*	--	--
V4	Yes	--	Yes*	--	--
V5	Yes	--	Yes*	--	--
V6	Yes	--	Yes*	--	--
V	Yes	--	Yes*	--	--
HR	Yes	Yes	--	Yes	Yes

* - Excluded are specific alarm types: a) Asystole and b) VFIB/VTAC

- Arrhythmia analysis is done at the bedside device.
- The following are recognized alarm types at the CIC:
  - Asystole
  - VFIB/VTAC
  - Vtach
  - V2>2
  - V Brady
  - Brady
  - Acc Vent
  - R on T
  - Couple T
  - Bigeminy
  - Trigeminy
  - PVC
  - Irregular (including AFIB)

Episodic Temperature

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Temperature	Temp	--	Yes	--	--	Yes*

* - Data presented only as periodic

Femoral Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Peripheral Pulse Rate	PPR	--	Yes	Yes	Yes	Yes

* - As 1 waveform

Inter-Cranial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Left-Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Mass Spec

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Carbon Dioxide (Inspired/Expired)	CO2-I/CO2-E	--	Yes	Yes	Yes	Yes
Oxygen (Inspired/Expired)	O2-I/O2-E	--	Yes	Yes	Yes	Yes
Nitrous Oxide (Inspired/Expired)	NO2-I/NO2-E	--	Yes	Yes	Yes	Yes

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Nitrogen (Inspired/Expired)	N2-I/N2-E	--	Yes	Yes	Yes	Yes
Desflorane (Inspired/Expired)	DES-I/DES-E	--	Yes	Yes	Yes	Yes
Enflurane (Inspired/ Expired)	ENF-I/ENF-E*	--	Yes	Yes	Yes	Yes
Halothane (Inspired/Expired)	HAL-I/HAL-E	--	Yes	Yes	Yes	Yes
Helium (Inspired/Expired)	HEL-I/HEL-E	--	Yes	Yes	Yes	Yes
Isoflorane (Inspired/Expired)	ISO-I/ISO-E	--	Yes	Yes	Yes	Yes
Argon (Inspired/Expired)	ARG-I/ARG-E	--	Yes	Yes	Yes	Yes
Sevane	SEV	--	Yes	Yes	Yes	Yes
No Breath	--	--	--	Yes	Yes	--

* - Enflurane can also be shown as ETH

Non-Invasive Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	--	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	--	Yes	Yes	Yes	Yes
Mean Pressure	Mean	--	Yes	Yes	Yes	Yes
Rate	---	--	Yes	Yes	Yes	Yes

Non-Invasive Cardiac Output

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
NonInvasive Cardiac Output	NCO	--	Yes	Yes	Yes	Yes
NonInvasive Pulmonary Capillary Blood Flow	NPCBF	--	Yes	--	--	Yes
NonInvasive Cardiac Index	NCI	--	Yes	--	--	Yes
NonInvasive Cardiac Stroke Volume	NSV	--	Yes	--	--	Yes

Other Cardiac Parameters

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Heart Rate	HR	--	Yes	Yes	Yes	Yes
Premature Ventricular Contraction	PVC	--	Yes	Yes	Yes	Yes

Pulmonary Artery Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Pulmonary Arterial Wedge	PAW	--	Yes	--	--	Yes

* - As 1 waveform

Pulmonary Calculations

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Fractional Inspired Oxygen	FIO2	--	--	--	--	Yes
Positive end expiratory pressure	PEEP	--	--	--	--	Yes
Respiration Rate	RR	--	--	--	--	Yes
Tidal Volume	TV	--	--	--	--	Yes
Peak Inspiratory Pressure	PIP	--	--	--	--	Yes
Cardiac Output	CO	--	--	--	--	Yes
Barometric Pressure	PBAR	--	--	--	--	Yes
Hemaglobin	Hb	--	--	--	--	Yes
Partial Pressure of CO2 in Arterial Blood,	PaCO2	--	--	--	--	Yes
Partial Pressure of O2 in Arterial Blood Arterial Oxygen Saturation	PaO2	--	--	--	--	Yes
Partial Pressure of O2 in Mixed Venous	SaO2	--	--	--	--	Yes
Systemic Venous Oxygen	SvO2	--	--	--	--	Yes

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Body Surface Area	BSA	--	--	--	--	Yes
Compliance Dynamic	Cdyn(Ced)	--	--	--	--	Yes
Minute Volume	MV	--	--	--	--	Yes
Cardiac Index	CI	--	--	--	--	Yes
Alveolar Arterial Oxygen Gradient	AaDO2	--	--	--	--	Yes
Arterial Oxygen Content	CaO2	--	--	--	--	Yes
Oxygen Delivery Index	DO2I(O2DI)	--	--	--	--	Yes
Mixed Venous Oxygen Content	CvO2	--	--	--	--	Yes
Arterial Venous Oxygen content difference	a-vO2	--	--	--	--	Yes
Oxygen Consumption Index	VO2I(O2CI)	--	--	--	--	Yes
Oxygen Extraction Ratio	O2ER(O2R)	--	--	--	--	Yes
Oxygenation Ratio	Pa/FiO2	--	--	--	--	Yes
Shunt Fraction	Qs/Qt	--	--	--	--	Yes
Fick Cardiac Output	FICKCO	--	--	--	--	Yes

Right Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	BP	Yes	Yes	Yes	Yes	Yes

Respiration Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Respiration Rate	RR	Yes	Yes	Yes	Yes	Yes
Respiration Rate-Apnea	RR-APNEA	--	--	Yes	Yes	--

Respiration Mechanics

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Minute Volume (Total, Spontaneous, and Mechanical),	rMV, rMVs, rMVm	--	Yes	--	--	Yes
Tidal Volume (Total, Spontaneous, and Mechanical)	rTV, rTVs, rTVm	--	Yes	--	--	Yes
Peak inspiratory pressure	rPIP	--	Yes	--	--	Yes
Mean airway pressure	Rmawp	--	Yes	--	--	Yes
Positive end expiratory pressure	rPEEP	--	Yes	--	--	Yes
Intrinsic peak end expiratory pressure	rPEEPi	--	Yes	--	--	Yes
Respiration rate (Total, Spontaneous, and Mechanical)	rRR, rRRs, rRRm	--	Yes	--	--	Yes
I:E ratio denominator	rI:E	--	Yes	--	--	Yes
Compliance (dynamic)	rCDYN	--	Yes	--	--	Yes
Resistance (expiratory)	rRAWe	--	Yes	--	--	Yes
Work of breathing (ventilator)	rWOVm	--	Yes	--	--	Yes
Peak Expiratory Flow	Rpef	--	Yes	--	--	Yes

SPO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Pulmonary Oxygen Saturation Mean	SPO2	Yes	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Rate	SPO2-R	--	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Mean (from Tram module)	SPO2-M	Yes	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Rate (from Tram module)	SPO2-M-R	--	Yes	Yes	Yes	Yes

Special Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

ST Parameter

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
I	--	--	Yes	Yes	Yes	Yes
II	--	--	Yes	Yes	Yes	Yes
III	--	--	Yes	Yes	Yes	Yes
AVR	--	--	Yes	Yes	Yes	Yes
AVL	--	--	Yes	Yes	Yes	Yes
AVF	--	--	Yes	Yes	Yes	Yes
V1	--	--	Yes	Yes	Yes	Yes
V2	--	--	Yes	Yes	Yes	Yes
V3	--	--	Yes	Yes	Yes	Yes
V4	--	--	Yes	Yes	Yes	Yes
V5	--	--	Yes	Yes	Yes	Yes
V6	--	--	Yes	Yes	Yes	Yes
V	--	--	--	--	--	Yes

SvO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Oxygen Saturation	SVO2	--	Yes	Yes	Yes	Yes
Signal Strength	“*” notation	--	Yes	--	--	--

Transcutaneous CO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Transcutaneous Carbon Dioxide	tcCO2	--	Yes	--	--	--
Transcutaneous Oxygen	tcO2	--	Yes	--	--	--
Temperature	temp	--	Yes	--	--	--
Power	power	--	Yes	--	--	--
Timer	timer	--	Yes	--	--	--

TramModule Transcutaneous CO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Transcutaneous Carbon Dioxide	tcmCO2	--	--	--	--	Yes
Transcutaneous Oxygen	tcmO2	--	--	--	--	Yes
Temperature	mtemp	--	--	--	--	Yes
Power	mpower	--	--	--	--	Yes

Temperature

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Temperature 1	Temp1	--	Yes	Yes	Yes	Yes
Temperature 2	Temp2	--	Yes	Yes	Yes	Yes

Umbilical Pressure (UAC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Rate	Rate	--	Yes	Yes	Yes	Yes

* - As 1 waveform

Umbilical (UV, UVC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	BP	Yes	Yes	Yes	Yes	Yes

Ventilator Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Positive End Expiratory Pressure	PEEP	--	Yes	Yes*	--	Yes
Fraction of Inspired Oxygen	FiO2	--	Yes	Yes*	--	Yes
Peak Inspiratory Pressure	PIP	--	Yes	Yes*	--	Yes
Mean Airway Pressure	MAWP	--	Yes	Yes*	--	Yes
Ventilator Rate	VNT-RR	--	--	Yes*	--	Yes
Flow Rate	FLW-RT	--	--	Yes*	--	Yes
Inspiratory Time	INSP	--	--	Yes*	--	Yes
Inspiratory: Expiration Ratio Denominator	I:E	--	--	Yes*	--	Yes
Sensitivity	SENS	--	Yes	Yes*	--	Yes
Respiratory Rate	PT-RR	--	Yes	Yes*	--	Yes
Plateau Pressure	PPLAT	--	Yes	Yes*	--	Yes
Inspiration Hold Time	IN-HLD	--	--	Yes*	--	Yes
Positive Pressure Support	PPS	--	--	Yes*	--	Yes
Exhaled Tidal Volume	TV	--	Yes	Yes*	--	Yes
Minute Volume	MV	--	Yes	Yes*	--	Yes

* - Single ‘Vent’ Alarm for all parameters

C Webmin Runtime Diagnostics Utilities

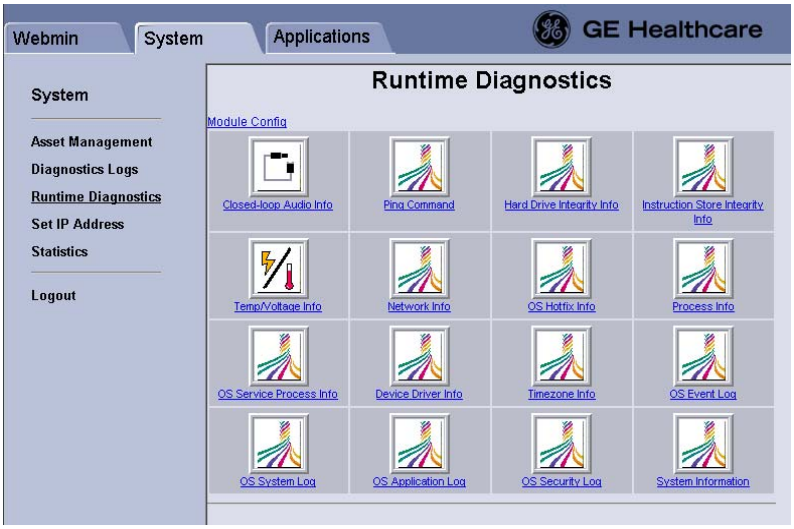
For your notes

Runtime Diagnostics

Webmin runtime diagnostics utilities provide several tools for viewing/ troubleshooting a variety of system components. See "Webmin Runtime Diagnostics Utilities" on page C-1 for details about runtime diagnostics utilities.

To access the runtime diagnostics utilities:

1. Login to Webmin according to "Webmin Overview" on page 2-17.
2. Click the *System* tab.
3. Click the *Runtime Diagnostics* link.

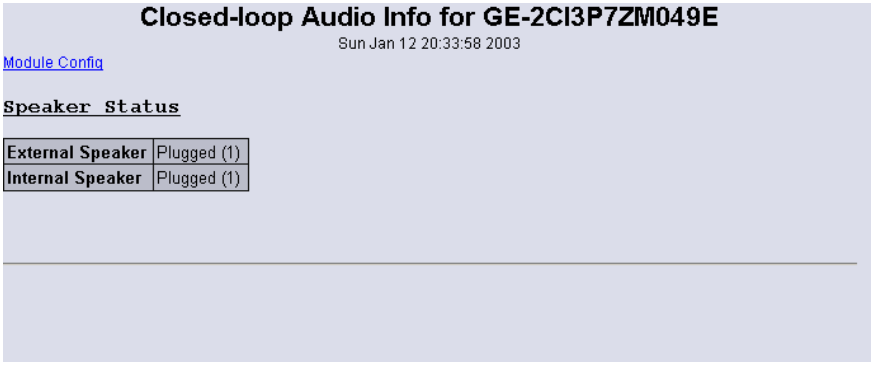


Runtime diagnostics functionality is divided across a number of different screens. Refer to the following locations for more information about functionality associated with each screen:

- "Closed-loop Audio Info" on page C-4
- "Ping Command" on page C-5
- "Hard Drive Integrity Info" on page C-6
- "Instruction Store Integrity Info" on page C-7
- "Temp/Voltage Info" on page C-8
- "Network Info" on page C-9
- "OS Hotfix Info" on page C-10
- "Process Info" on page C-11
- "OS Service Process Info" on page C-12
- "Device Driver Info" on page C-13
- "Timezone Info" on page C-14
- "OS Event Log" on page C-15
- "OS System Log" on page C-16
- "OS Application Log" on page C-17
- "OS Security Log" on page C-18
- "System Information" on page C-19

Closed-loop Audio Info

Closed-loop Audio Info displays real-time internal/external speaker wiring integrity information. Click the *Closed-loop Audio Info* button to display the information.



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The *Closed-loop Audio Info* window displays the current status of the speaker wiring:

Plugged ([number of detected connections])	Speaker plug properly connected.
Unplugged ([number of detected connections - usually "0"])	Speaker plug NOT properly connected.

Ping Command

1. Click the *Ping Command* button.

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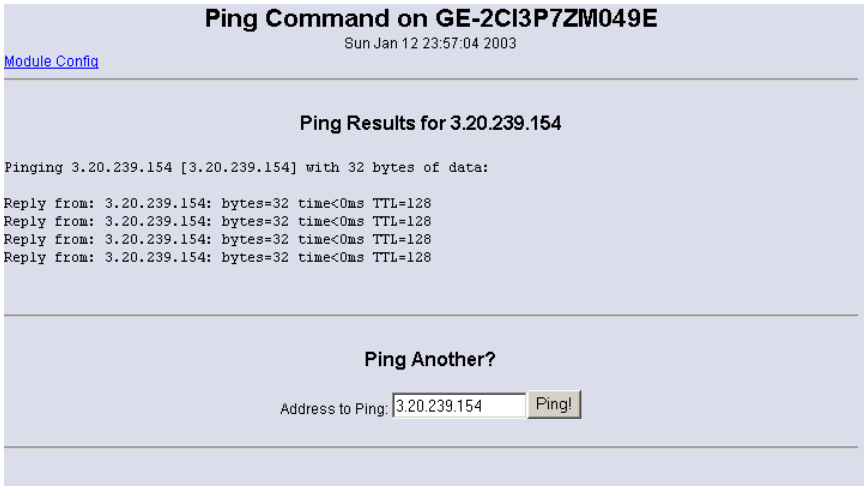
2. Type the IP address of the device you want to ping into the *Address to Ping* field. Click *Ping*.


Ping Command on GE-2CI3P7ZM049E
Sun Jan 12 23:57:04 2003
Module Config
Ping Results for 3.20.239.154
Pinging 3.20.239.154 [3.20.239.154] with 32 bytes of data:
Reply from: 3.20.239.154: bytes=32 time<0ms TTL=128
Reply from: 3.20.239.154: bytes=32 time<0ms TTL=128
Reply from: 3.20.239.154: bytes=32 time<0ms TTL=128
Reply from: 3.20.239.154: bytes=32 time<0ms TTL=128
Ping Another?
Address to Ping: 3.20.239.154
Ping!

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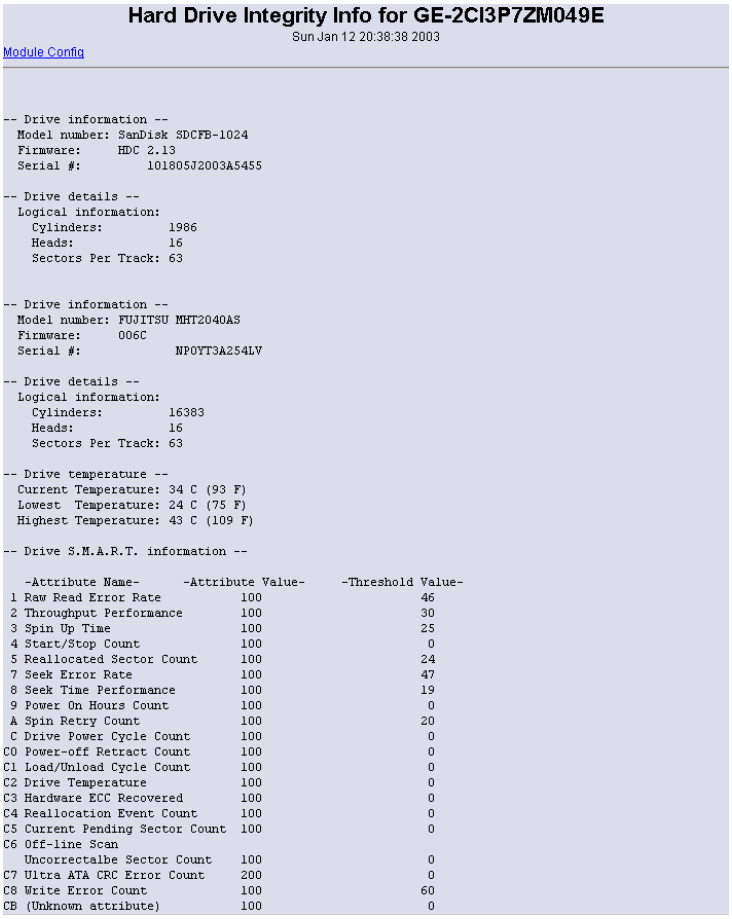
Hard Drive Integrity Info

Hard Drive Integrity displays hard drive model/serial number, firmware, operating temperature (current/lowest/highest) and logical information. Click the *Hard Drive Integrity* button to display the information.



Hard Drive Integrity Info for GE-2CI3P7ZM049E

Sun Jan 12 20:38:38 2003

Module Config

```
-- Drive information --
  Model number: SanDisk SDCFB-1024
  Firmware:     HDC 2.13
  Serial #:         101805J2003A5455

-- Drive details --
  Logical information:
    Cylinders:         1986
    Heads:             16
    Sectors Per Track: 63


-- Drive information --
  Model number: FUJITSU MHT2040AS
  Firmware:     006C
  Serial #:              NP0YT3A254LV

-- Drive details --
  Logical information:
    Cylinders:         16383
    Heads:             16
    Sectors Per Track: 63

-- Drive temperature --
  Current Temperature: 34 C (93 F)
  Lowest  Temperature: 24 C (75 F)
  Highest Temperature: 43 C (109 F)

-- Drive S.M.A.R.T. information --

   -Attribute Name-      -Attribute Value-     -Threshold Value-
 1 Raw Read Error Rate           100                     46
 2 Throughput Performance        100                     30
 3 Spin Up Time                  100                     25
 4 Start/Stop Count              100                      0
 5 Reallocated Sector Count      100                     24
 7 Seek Error Rate               100                     47
 8 Seek Time Performance         100                     19
 9 Power On Hours Count          100                      0
 A Spin Retry Count              100                     20
 C Drive Power Cycle Count       100                      0
C0 Power-off Retract Count       100                      0
C1 Load/Unload Cycle Count       100                      0
C2 Drive Temperature             100                      0
C3 Hardware ECC Recovered        100                      0
C4 Reallocation Event Count      100                      0
C5 Current Pending Sector Count  100                      0
C6 Off-line Scan
   Uncorrectalbe Sector Count    100                      0
C7 Ultra ATA CRC Error Count     200                      0
C8 Write Error Count             100                     60
CB (Unknown attribute)           100                      0
```

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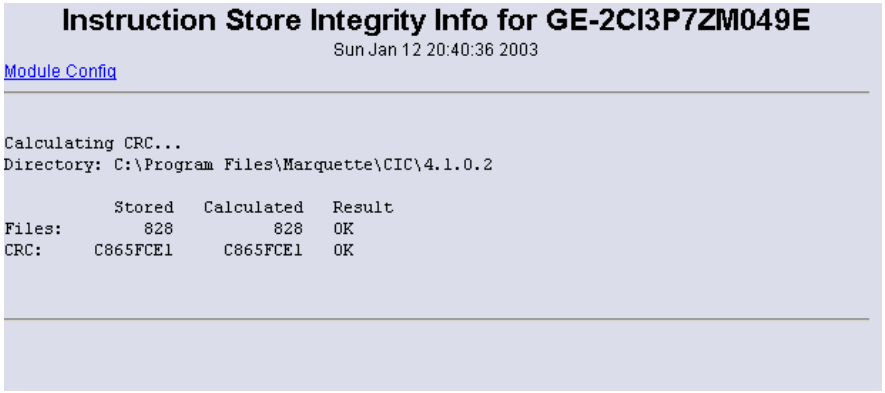
Instruction Store Integrity Info

Instruction Store Integrity Info displays instruction store information. Click the *Instruction Store Integrity Info* button to display the information.



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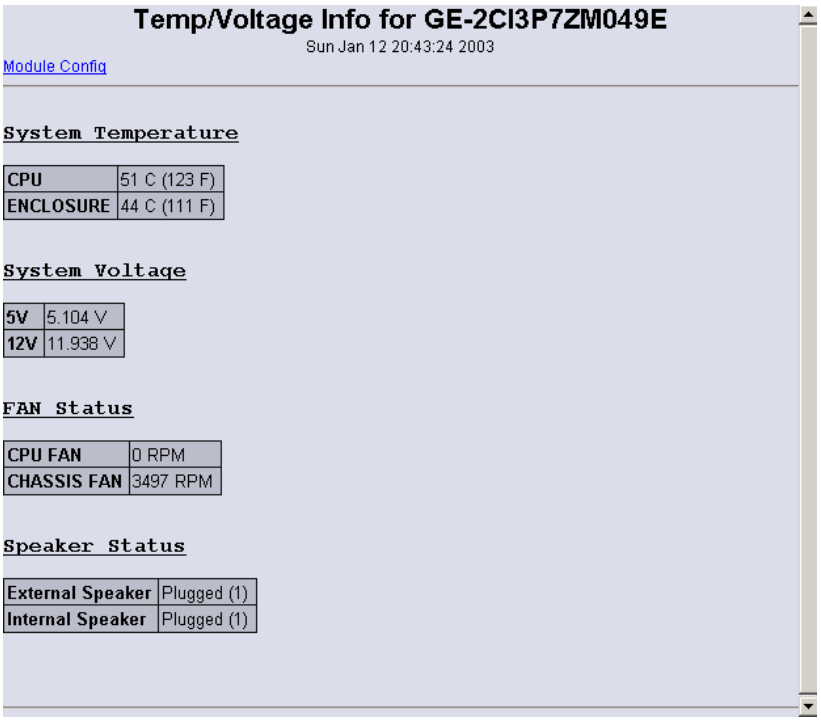
Temp/Voltage Info

Temp/Voltage Info displays current CIC Pro internal temperature, system voltage, fan and speaker status. Click the *Temp/Voltage Info* button to display the information.



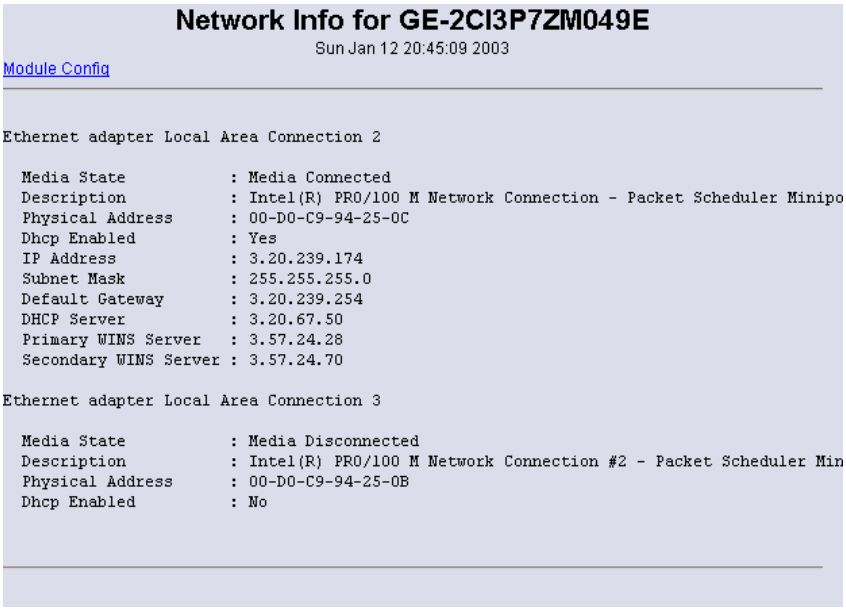
071A

The values should fall within the following limits:

System Temperature	
CPU	5 — 90° C
Enclosure	5 — 70° C
System Voltage	
5V	4850 — 5250 mV
12V	11400 — 12600 mV
Fan Status	
CPU Fan	2700 — 4000 rpm
Chassis Fan	1700 — 4000 rpm
Speaker Status	
External	Plugged
Internal	Plugged

Network Info

Network Info displays network information associated with the CIC Pro. Click the *Network Info* button to display the information.


Network Info for GE-2CI3P7ZM049E
Sun Jan 12 20:45:09 2003
Module Config
Ethernet adapter Local Area Connection 2
Media State : Media Connected
Description : Intel(R) PRO/100 M Network Connection - Packet Scheduler Minipo
Physical Address : 00-D0-C9-94-25-0C
Dhcp Enabled : Yes
IP Address : 3.20.239.174
Subnet Mask : 255.255.255.0
Default Gateway : 3.20.239.254
DHCP Server : 3.20.67.50
Primary WINS Server : 3.57.24.28
Secondary WINS Server : 3.57.24.70
Ethernet adapter Local Area Connection 3
Media State : Media Disconnected
Description : Intel(R) PRO/100 M Network Connection #2 - Packet Scheduler Min
Physical Address : 00-D0-C9-94-25-0B
Dhcp Enabled : No

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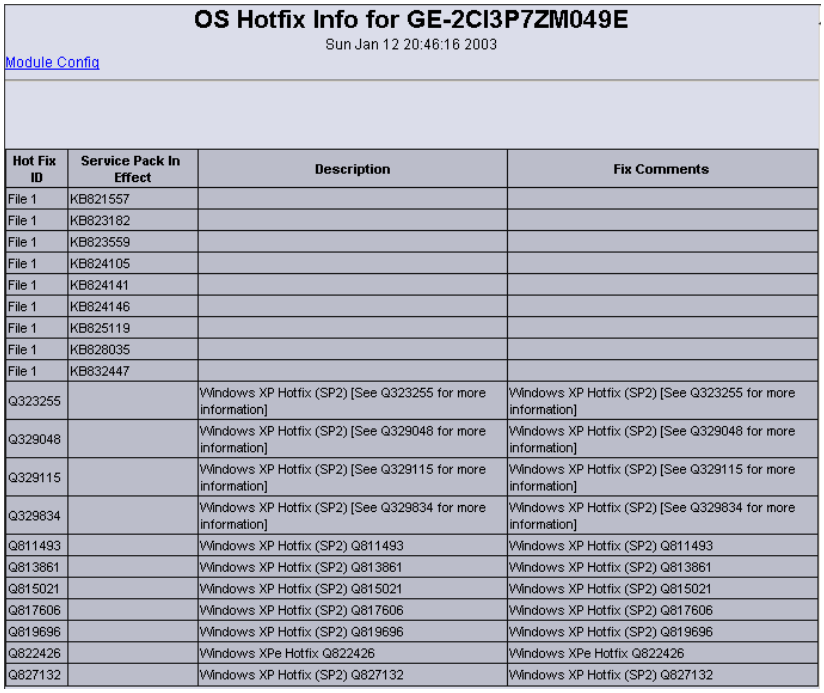
Displayed information includes:

- Media State
- Description
- Physical Address
- DHCP Enabled
- IP Address
- Subnet Mask
- Default Gateway
- DHCP Server
- Primary WINS Server
- Secondary WINS Server

OS Hotfix Info

OS Hotfix Info displays information about installed operating system security patches. Check this information to determine if specific security patches are already installed.

Click the *OS Hotfix Info* button to display the information.



OS Hotfix Info for GE-2CI3P7ZM049E

Sun Jan 12 20:46:16 2003

Module Config

Hot Fix ID	Service Pack In Effect	Description	Fix Comments
File 1	KB821557		
File 1	KB823182		
File 1	KB823559		
File 1	KB824105		
File 1	KB824141		
File 1	KB824146		
File 1	KB825119		
File 1	KB828035		
File 1	KB832447		
Q323255		Windows XP Hotfix (SP2) [See Q323255 for more information]	Windows XP Hotfix (SP2) [See Q323255 for more information]
Q329048		Windows XP Hotfix (SP2) [See Q329048 for more information]	Windows XP Hotfix (SP2) [See Q329048 for more information]
Q329115		Windows XP Hotfix (SP2) [See Q329115 for more information]	Windows XP Hotfix (SP2) [See Q329115 for more information]
Q329834		Windows XP Hotfix (SP2) [See Q329834 for more information]	Windows XP Hotfix (SP2) [See Q329834 for more information]
Q811493		Windows XP Hotfix (SP2) Q811493	Windows XP Hotfix (SP2) Q811493
Q813861		Windows XP Hotfix (SP2) Q813861	Windows XP Hotfix (SP2) Q813861
Q815021		Windows XP Hotfix (SP2) Q815021	Windows XP Hotfix (SP2) Q815021
Q817606		Windows XP Hotfix (SP2) Q817606	Windows XP Hotfix (SP2) Q817606
Q819696		Windows XP Hotfix (SP2) Q819696	Windows XP Hotfix (SP2) Q819696
Q822426		Windows XPe Hotfix Q822426	Windows XPe Hotfix Q822426
Q827132		Windows XP Hotfix (SP2) Q827132	Windows XP Hotfix (SP2) Q827132

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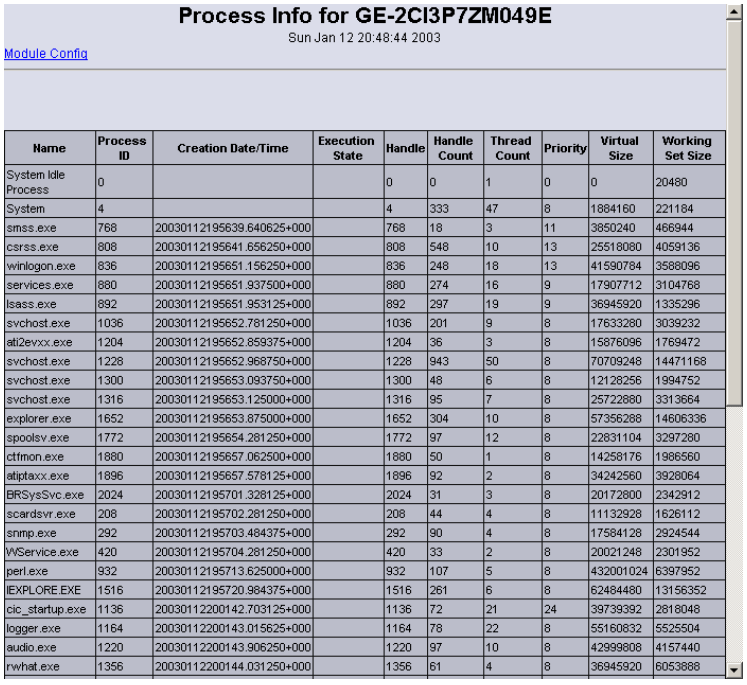
Displayed information includes:

- Hotfix ID
- Hotfix Service Pack
- Hotfix Description
- Comments

Process Info

Process Info displays logged process information. Click the *Process Info* button to display the information.



Process Info for GE-2CI3P7ZM049E

Sun Jan 12 20:48:44 2003

Module Config

Name	Process ID	Creation Date/Time	Execution State	Handle	Handle Count	Thread Count	Priority	Virtual Size	Working Set Size
System Idle Process	0			0	0	1	0	0	20480
System	4			4	333	47	8	1884160	221184
smss.exe	768	20030112195639.640625+000		768	18	3	11	3850240	466944
csrss.exe	808	20030112195641.656250+000		808	548	10	13	25518080	4059136
winlogon.exe	836	20030112195651.156250+000		836	248	18	13	41590784	3588096
services.exe	880	20030112195651.937500+000		880	274	16	9	17907712	3104768
lsass.exe	892	20030112195651.953125+000		892	297	19	9	36945920	1335296
svchost.exe	1036	20030112195652.781250+000		1036	201	9	8	17633280	3039232
ati2evxx.exe	1204	20030112195652.859375+000		1204	36	3	8	15876096	1769472
svchost.exe	1228	20030112195652.968750+000		1228	943	50	8	70709248	14471168
svchost.exe	1300	20030112195653.093750+000		1300	48	6	8	12128256	1994752
svchost.exe	1316	20030112195653.125000+000		1316	95	7	8	25722880	3313664
explorer.exe	1652	20030112195653.875000+000		1652	304	10	8	57356288	14606336
spoolsv.exe	1772	20030112195654.281250+000		1772	97	12	8	22831104	3297280
ctfmon.exe	1880	20030112195657.062500+000		1880	50	1	8	14258176	1986560
atiptaxx.exe	1896	20030112195657.578125+000		1896	92	2	8	34242560	3928064
BRSysSvc.exe	2024	20030112195701.328125+000		2024	31	3	8	20172800	2342912
scardsvr.exe	208	20030112195702.281250+000		208	44	4	8	11132928	1626112
snmp.exe	292	20030112195703.484375+000		292	90	4	8	17584128	2924544
WService.exe	420	20030112195704.281250+000		420	33	2	8	20021248	2301952
perl.exe	932	20030112195713.625000+000		932	107	5	8	432001024	6397952
IEXPLORE.EXE	1516	20030112195720.984375+000		1516	261	6	8	62484480	13156352
cic_startup.exe	1136	20030112200142.703125+000		1136	72	21	24	39739392	2818048
logger.exe	1164	20030112200143.015625+000		1164	78	22	8	55160832	5525504
audio.exe	1220	20030112200143.906250+000		1220	97	10	8	42999808	4157440
rwhat.exe	1356	20030112200144.031250+000		1356	61	4	8	36945920	6053888

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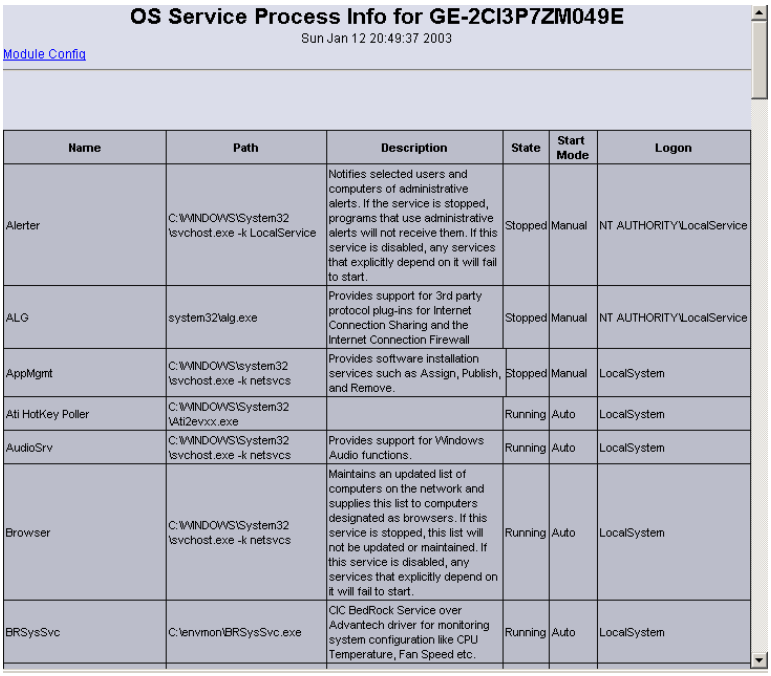
- Priority
- Virtual Size
- Working Set Size

OS Service Process Info

OS Service Process Info displays logged service process information. Click the *OS Service Process Info* button to display the information.



OS Service Process Info for GE-2CI3P7ZM049E

Sun Jan 12 20:49:37 2003

Module Config

Name	Path	Description	State	Start Mode	Logon
Alerter	C:\WINDOWS\System32 \svchost.exe -k LocalService	Notifies selected users and computers of administrative alerts. If the service is stopped, programs that use administrative alerts will not receive them. If this service is disabled, any services that explicitly depend on it will fail to start.	Stopped	Manual	NT AUTHORITY\LocalService
ALG	system32\alg.exe	Provides support for 3rd party protocol plug-ins for Internet Connection Sharing and the Internet Connection Firewall	Stopped	Manual	NT AUTHORITY\LocalService
AppMgmt	C:\WINDOWS\system32 \svchost.exe -k netsvcs	Provides software installation services such as Assign, Publish, and Remove.	Stopped	Manual	LocalSystem
Ati HotKey Poller	C:\WINDOWS\System32 \Ati2evxx.exe		Running	Auto	LocalSystem
AudioSrv	C:\WINDOWS\System32 \svchost.exe -k netsvcs	Provides support for Windows Audio functions.	Running	Auto	LocalSystem
Browser	C:\WINDOWS\System32 \svchost.exe -k netsvcs	Maintains an updated list of computers on the network and supplies this list to computers designated as browsers. If this service is stopped, this list will not be updated or maintained. If this service is disabled, any services that explicitly depend on it will fail to start.	Running	Auto	LocalSystem
BRSysSvc	C:\envmon\BRSysSvc.exe	CIC BedRock Service over Advantech driver for monitoring system configuration like CPU Temperature, Fan Speed etc.	Running	Auto	LocalSystem

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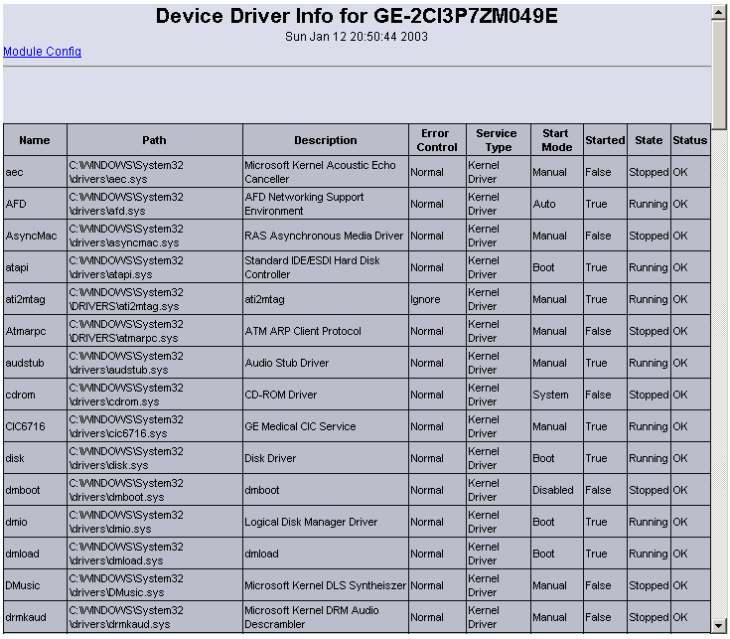
Displayed information includes the following Service Process details:

- Name
- Path
- Description
- State (Running/Stopped)
- Start Mode (Auto/Manual)
- Logon

Device Driver Info

Device Driver Info displays driver information, including current state. Click the *Device Driver Info* button to display the information.



Device Driver Info for GE-2CI3P7ZM049E

Sun Jan 12 20:50:44 2003

Module Config

Name	Path	Description	Error Control	Service Type	Start Mode	Started	State	Status
aec	C:\WINDOWS\System32 \drivers\aec.sys	Microsoft Kernel Acoustic Echo Canceller	Normal	Kernel Driver	Manual	False	Stopped	OK
AFD	C:\WINDOWS\System32 \drivers\afd.sys	AFD Networking Support Environment	Normal	Kernel Driver	Auto	True	Running	OK
AsyncMac	C:\WINDOWS\System32 \drivers\asyncmac.sys	RAS Asynchronous Media Driver	Normal	Kernel Driver	Manual	False	Stopped	OK
atapi	C:\WINDOWS\System32 \drivers\atapi.sys	Standard IDE/ESDI Hard Disk Controller	Normal	Kernel Driver	Boot	True	Running	OK
ati2mtag	C:\WINDOWS\System32 \DRIVERS\ati2mtag.sys	ati2mtag	Ignore	Kernel Driver	Manual	True	Running	OK
Atmarpc	C:\WINDOWS\System32 \DRIVERS\atmarpc.sys	ATM ARP Client Protocol	Normal	Kernel Driver	Manual	False	Stopped	OK
audstub	C:\WINDOWS\System32 \drivers\audstub.sys	Audio Stub Driver	Normal	Kernel Driver	Manual	True	Running	OK
cdrom	C:\WINDOWS\System32 \drivers\cdrom.sys	CD-ROM Driver	Normal	Kernel Driver	System	False	Stopped	OK
CIC6716	C:\WINDOWS\System32 \drivers\cic6716.sys	GE Medical CIC Service	Normal	Kernel Driver	Manual	True	Running	OK
disk	C:\WINDOWS\System32 \drivers\disk.sys	Disk Driver	Normal	Kernel Driver	Boot	True	Running	OK
dmboot	C:\WINDOWS\System32 \drivers\dmboot.sys	dmboot	Normal	Kernel Driver	Disabled	False	Stopped	OK
dmio	C:\WINDOWS\System32 \drivers\dmio.sys	Logical Disk Manager Driver	Normal	Kernel Driver	Boot	True	Running	OK
dmload	C:\WINDOWS\System32 \drivers\dmload.sys	dmload	Normal	Kernel Driver	Boot	True	Running	OK
DMusic	C:\WINDOWS\System32 \drivers\DMusic.sys	Microsoft Kernel DLS Syntheiszer	Normal	Kernel Driver	Manual	False	Stopped	OK
drmkaud	C:\WINDOWS\System32 \drivers\drmkaud.sys	Microsoft Kernel DRM Audio Descrambler	Normal	Kernel Driver	Manual	False	Stopped	OK

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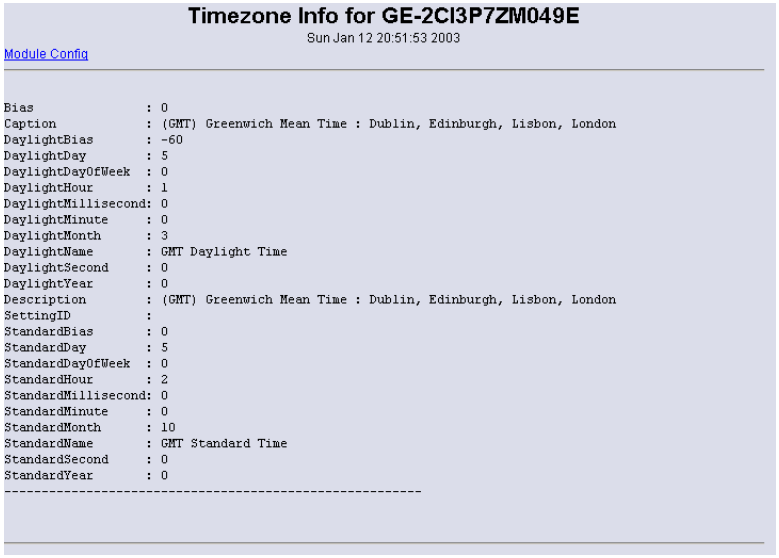
Displayed information includes the following Driver details:

- Name
- Path
- Description
- Error Control
- Service Type
- Start Mode
- Started (True/False)
- State (Running/Stopped)
- Status

Timezone Info

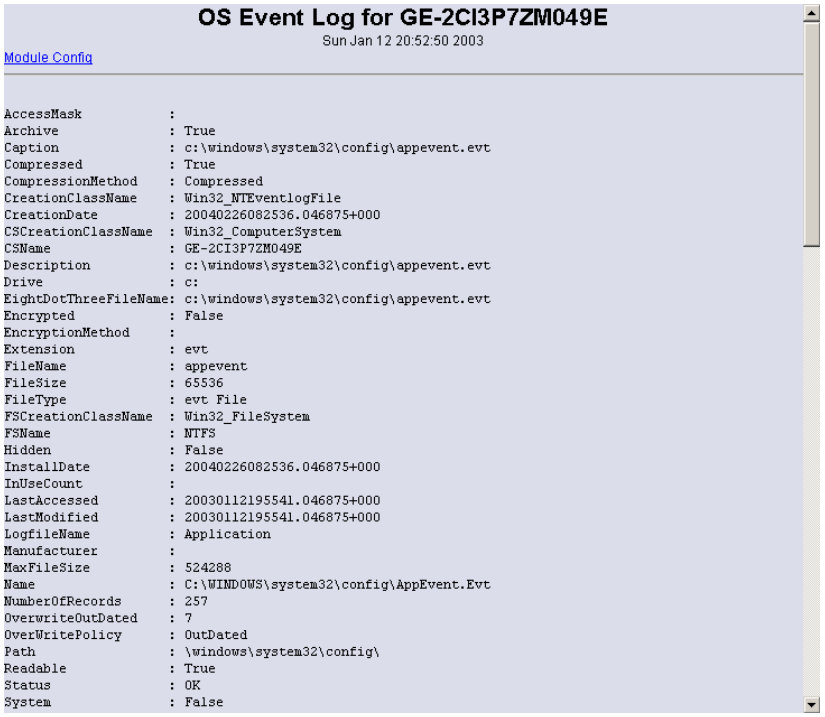
Timezone Info displays detailed timezone information for the CIC Pro. Click the *Timezone Info* button to display the information.



077A

OS Event Log

OS Event Log displays logged events for the CIC Pro. Click the *OS Event Log* button to display the information.

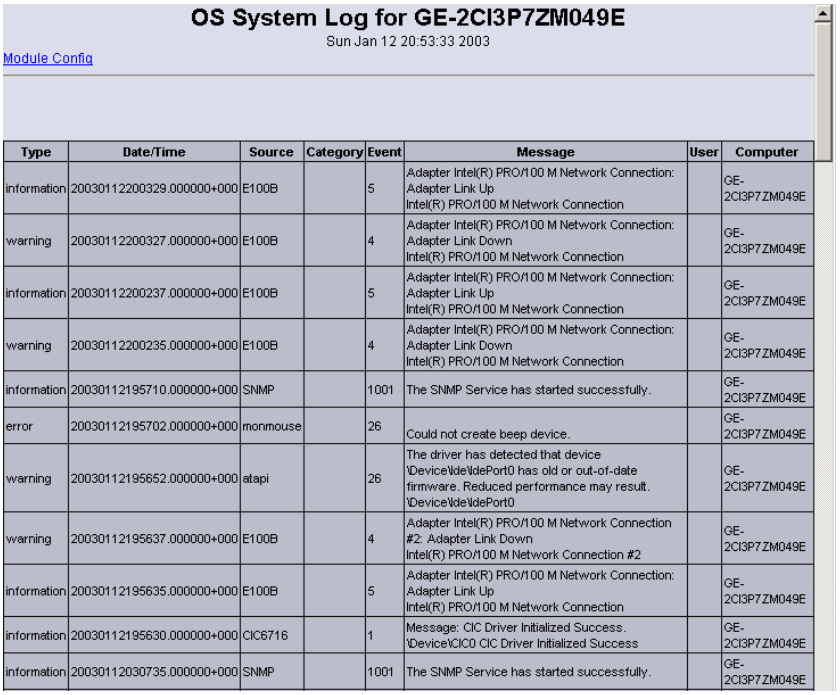


078A

Event logs can indicate corruption of CIC Pro data. Items indicating data corruption include *FileSize* values less than 1 or greater than 524288, or *Path* values either *null* or something other than *\winnt\system32\config*

OS System Log

OS System Log displays logged system events for the CIC Pro. Click the *OS System Log* button to display the information.



OS System Log for GE-2CI3P7ZM049E

Sun Jan 12 20:53:33 2003

Module Config

Type	Date/Time	Source	Category	Event	Message	User	Computer
information	20030112200329.000000+000	E100B		5	Adapter Intel(R) PRO/100 M Network Connection: Adapter Link Up Intel(R) PRO/100 M Network Connection		GE-2CI3P7ZM049E
warning	20030112200327.000000+000	E100B		4	Adapter Intel(R) PRO/100 M Network Connection: Adapter Link Down Intel(R) PRO/100 M Network Connection		GE-2CI3P7ZM049E
information	20030112200237.000000+000	E100B		5	Adapter Intel(R) PRO/100 M Network Connection: Adapter Link Up Intel(R) PRO/100 M Network Connection		GE-2CI3P7ZM049E
warning	20030112200235.000000+000	E100B		4	Adapter Intel(R) PRO/100 M Network Connection: Adapter Link Down Intel(R) PRO/100 M Network Connection		GE-2CI3P7ZM049E
information	20030112195710.000000+000	SNMP		1001	The SNMP Service has started successfully.		GE-2CI3P7ZM049E
error	20030112195702.000000+000	monmouse		26	Could not create beep device.		GE-2CI3P7ZM049E
warning	20030112195652.000000+000	atapi		26	The driver has detected that device \Device\Ide\IdePort0 has old or out-of-date firmware. Reduced performance may result. \Device\Ide\IdePort0		GE-2CI3P7ZM049E
warning	20030112195637.000000+000	E100B		4	Adapter Intel(R) PRO/100 M Network Connection #2: Adapter Link Down Intel(R) PRO/100 M Network Connection #2		GE-2CI3P7ZM049E
information	20030112195635.000000+000	E100B		5	Adapter Intel(R) PRO/100 M Network Connection: Adapter Link Up Intel(R) PRO/100 M Network Connection		GE-2CI3P7ZM049E
information	20030112195630.000000+000	CIC6716		1	Message: CIC Driver Initialized Success. \Device\CIC0 CIC Driver Initialized Success		GE-2CI3P7ZM049E
information	20030112030735.000000+000	SNMP		1001	The SNMP Service has started successfully.		GE-2CI3P7ZM049E

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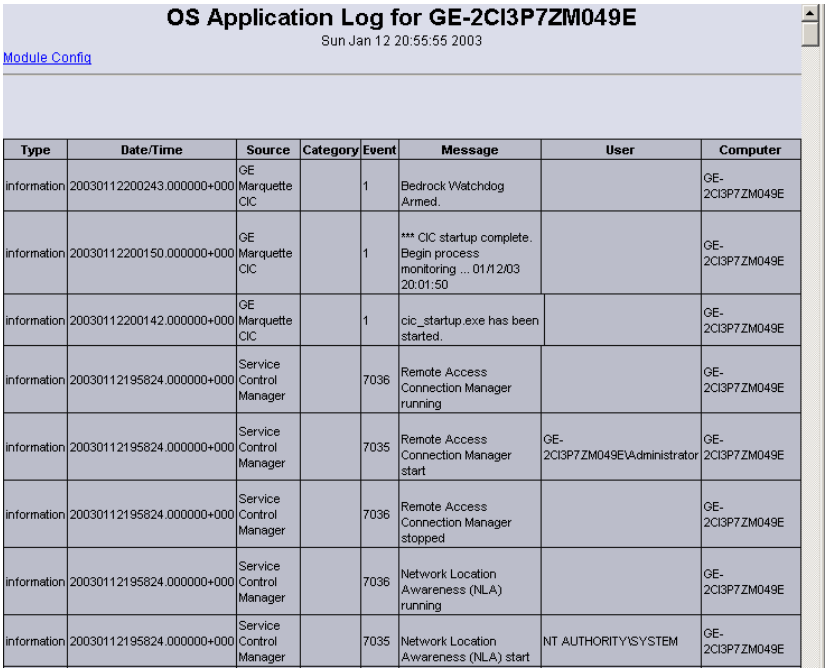
Displayed information includes the following system event details:

- Type
- Date/Time
- Source
- Category
- Event
- Message
- User
- Computer

OS Application Log

OS Application Log displays logged application event information. Click the *OS Application Log* button to display the information.



OS Application Log for GE-2CI3P7ZM049E

Sun Jan 12 20:55:55 2003

Module Config

Type	Date/Time	Source	Category	Event	Message	User	Computer
information	20030112200243.000000+000	GE Marquette CIC		1	Bedrock Watchdog Armed.		GE-2CI3P7ZM049E
information	20030112200150.000000+000	GE Marquette CIC		1	*** CIC startup complete. Begin process monitoring ... 01/12/03 20:01:50		GE-2CI3P7ZM049E
information	20030112200142.000000+000	GE Marquette CIC		1	cic_startup.exe has been started.		GE-2CI3P7ZM049E
information	20030112195824.000000+000	Service Control Manager		7036	Remote Access Connection Manager running		GE-2CI3P7ZM049E
information	20030112195824.000000+000	Service Control Manager		7035	Remote Access Connection Manager start	GE-2CI3P7ZM049E\Administrator	GE-2CI3P7ZM049E
information	20030112195824.000000+000	Service Control Manager		7036	Remote Access Connection Manager stopped		GE-2CI3P7ZM049E
information	20030112195824.000000+000	Service Control Manager		7036	Network Location Awareness (NLA) running		GE-2CI3P7ZM049E
information	20030112195824.000000+000	Service Control Manager		7035	Network Location Awareness (NLA) start	NT AUTHORITY\SYSTEM	GE-2CI3P7ZM049E

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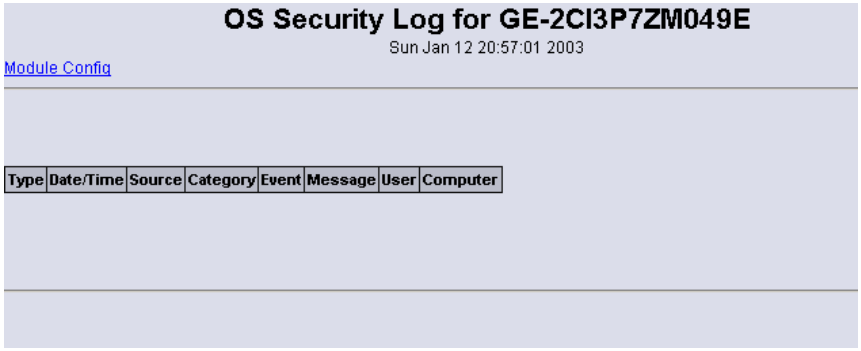
Displayed information includes the following application event details:

- Type
- Date/Time
- Source
- Category
- Event
- Message
- User
- Computer

OS Security Log

OS Security Log displays logged security event information. Click the *OS Security Log* button to display the information.



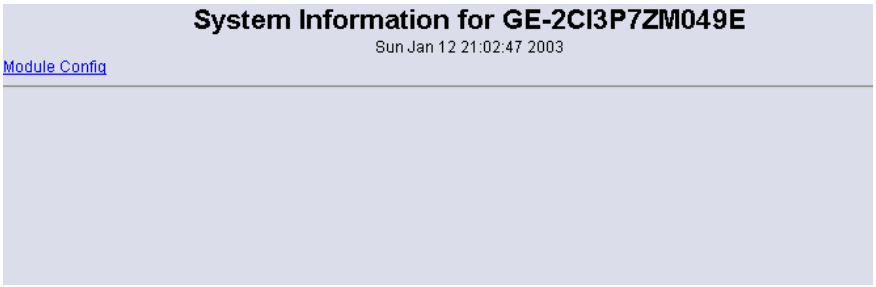
081A

Displayed information includes the following security event details:

- Type
- Date/Time
- Source
- Category
- Event
- Message
- User
- Computer

System Information

System Information displays system information. Click the *System Information* button to display the information.



083A

For your notes

D CIC Pro Service Tools

For your notes

Service Tools

The *CIC - Service Tool* provides several utilities for viewing/troubleshooting a variety of system components.

To access the runtime diagnostics utilities:

1. Login to the *CIC - Service Tool* according to "CIC Service Tool" on page 2-24.
2. Click the *System Tools* button.

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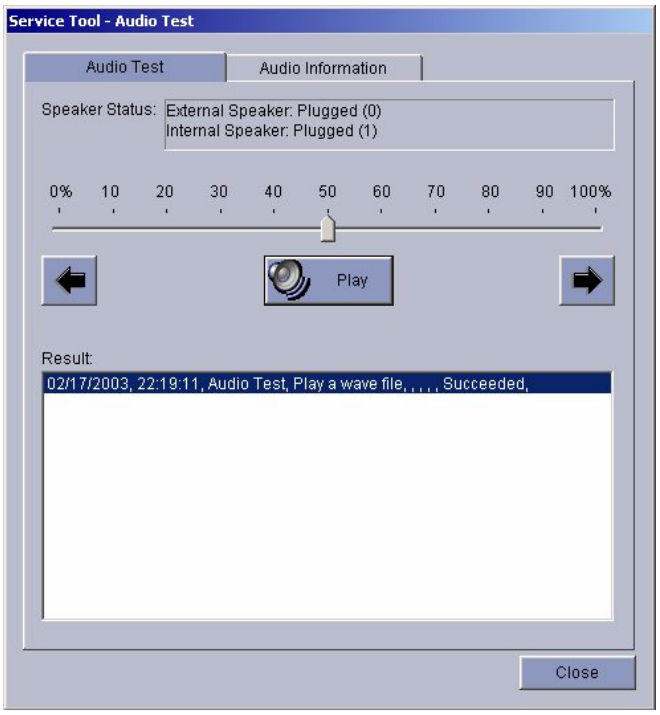
System Tools functionality is divided between a number of different utilities. Refer to the following locations for more information about functionality associated with each utility:

- "Audio Test" on page D-4
- "Drive Integrity Test" on page D-6
- "User Asset Management" on page D-8
- "Environment Monitoring" on page D-9
- "Network Integrity Test" on page D-11
- "Printing Test" on page D-13
- "Video Test" on page D-15
- "Watchdog Test" on page D-18

Audio Test

1. Double-click the *Audio Test* icon. The *Service Tool - Audio Test* window displays.
2. Click the *Audio Test* tab.


Service Tool - Audio Test
Audio Test
Audio Information
Speaker Status:
External Speaker: Plugged (0)
Internal Speaker: Plugged (1)
0% 10 20 30 40 50 60 70 80 90 100%
Play
Result:
02/17/2003, 22:19:11, Audio Test, Play a wave file, , , , , Succeeded,
Close

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3. Click the *Play* button. A sound should be heard from the CIC speakers.

   NOTE
   If necessary, adjust the sound volume with the right/left arrow buttons, or drag the sound percentage slider using the mouse.

4. The *Audio Test* pop-up window displays.

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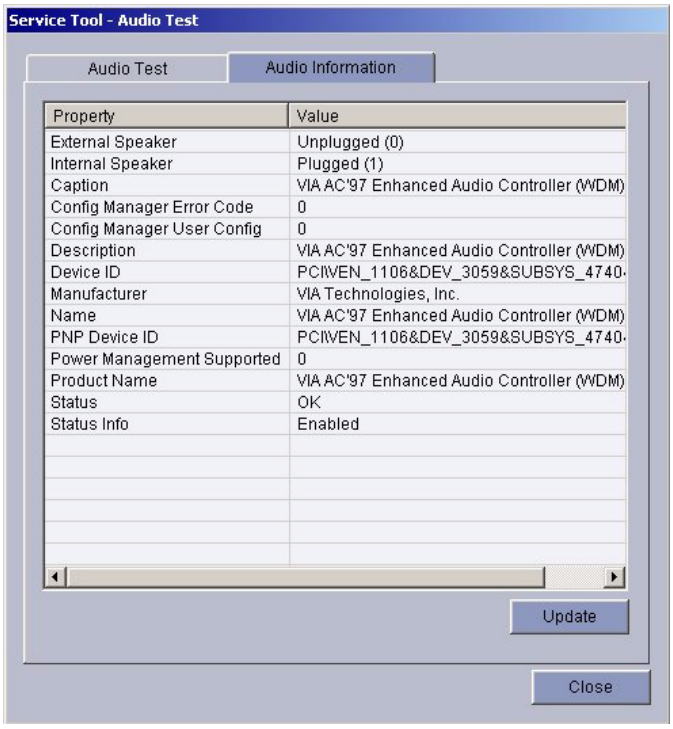
5. Click *Yes* if you heard a sound from the CIC Pro.
6. If no sound was heard, adjust the audio volume according to the NOTE in step 3, and repeat this procedure. If a sound is still not heard, troubleshooting of the sound card and/or other troubleshooting may be required.
7. Click the *Audio Information* tab. Information about the CIC Pro audio system displays. Information on this tab is used for audio troubleshooting.

NOTE

Click *Update* to refresh the displayed values.

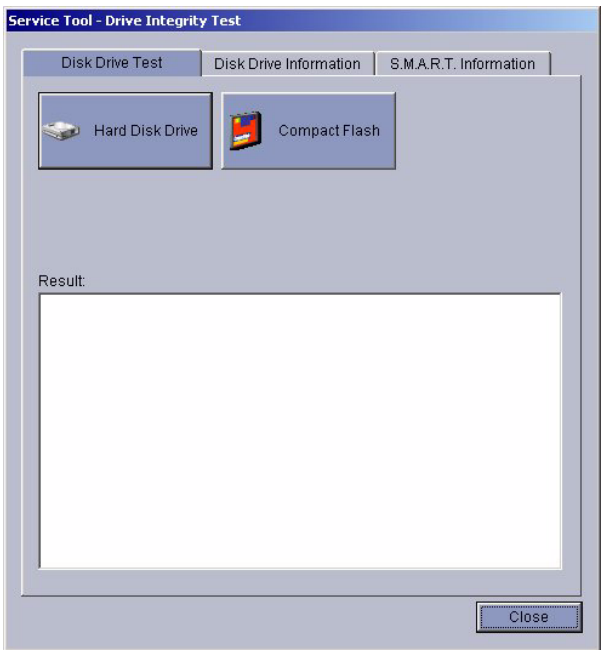


107A

8. When finished, click *Close* to close the *Service Tool - Audio Test* window.

Drive Integrity Test

1. Double-click the *Drive Integrity Test* icon. The *Service Tool - Drive Integrity Test* window displays.
2. Click the *Disk Drive Test* tab.



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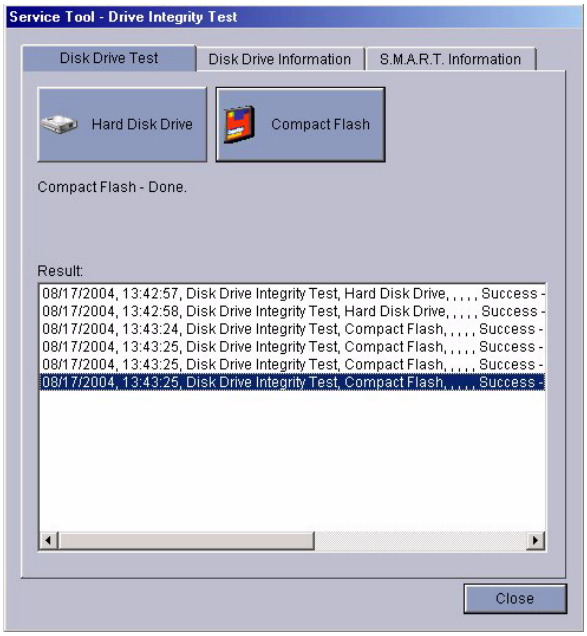
3. Click the *Hard Disk Drive* button. The integrity of the hard drive is checked, and the results are displayed in the *Result* field.
4. Click the *Compact Flash* button. The integrity of the compact flash storage card is checked, and the results are displayed in the *Result* field.

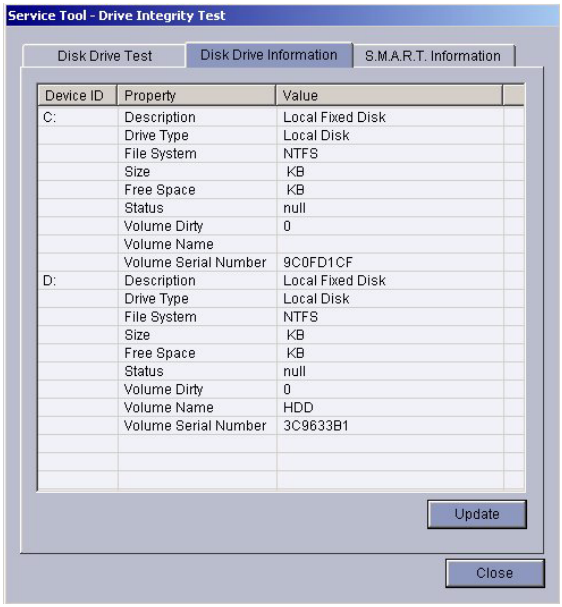

Service Tool - Drive Integrity Test
Disk Drive Test
Disk Drive Information
S.M.A.R.T. Information
Hard Disk Drive
Compact Flash
Compact Flash - Done.
Result:
08/17/2004, 13:42:57, Disk Drive Integrity Test, Hard Disk Drive, , , , , Success -
08/17/2004, 13:42:58, Disk Drive Integrity Test, Hard Disk Drive, , , , , Success -
08/17/2004, 13:43:24, Disk Drive Integrity Test, Compact Flash, , , , , Success -
08/17/2004, 13:43:25, Disk Drive Integrity Test, Compact Flash, , , , , Success -
08/17/2004, 13:43:25, Disk Drive Integrity Test, Compact Flash, , , , , Success -
08/17/2004, 13:43:25, Disk Drive Integrity Test, Compact Flash, , , , , Success -
Close

141A

5. Click the *Disk Drive Information* tab. Information about the CIC Pro storage media displays.

NOTE

Click *Update* to refresh the displayed values.



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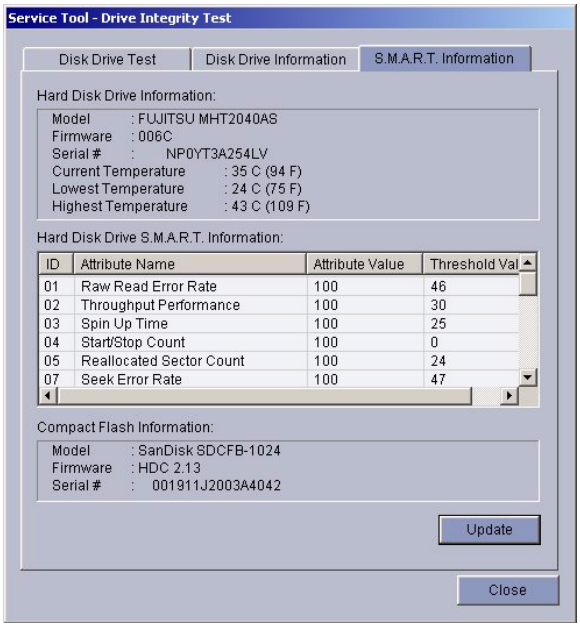
6. Click the *S.M.A.R.T Information* tab. SMART (Self Monitoring Analysis and Reporting Technology) information about the CIC Pro storage media displays.

NOTE

Click *Update* to refresh the displayed values.

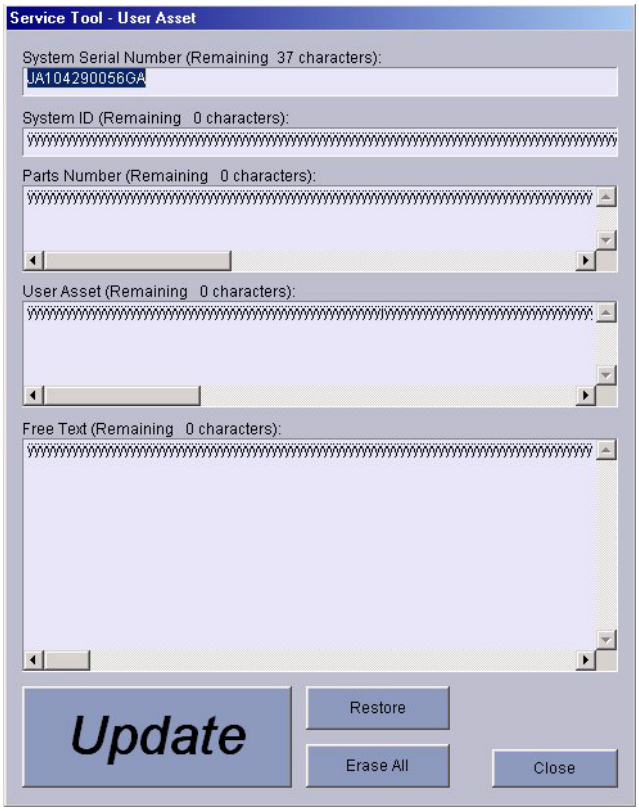

Service Tool - Drive Integrity Test
Disk Drive Test
Disk Drive Information
S.M.A.R.T. Information
Hard Disk Drive Information:
Model : FUJITSU MHT2040AS
Firmware : 006C
Serial # : NP0YT3A254LV
Current Temperature : 35 C (94 F)
Lowest Temperature : 24 C (75 F)
Highest Temperature : 43 C (109 F)
Hard Disk Drive S.M.A.R.T. Information:
ID
Attribute Name
Attribute Value
Threshold Val
01 Raw Read Error Rate 100 46
02 Throughput Performance 100 30
03 Spin Up Time 100 25
04 Start/Stop Count 100 0
05 Reallocated Sector Count 100 24
07 Seek Error Rate 100 47
Compact Flash Information:
Model : SanDisk SDCFB-1024
Firmware : HDC 2.13
Serial # : 001911J2003A4042
Update
Close

110A

7. When finished, click *Close* to close the *Service Tool - Drive Integrity Test* window.

User Asset Management

1. Double-click the *User Asset Management* icon. The *Service Tool - User Asset* window displays.



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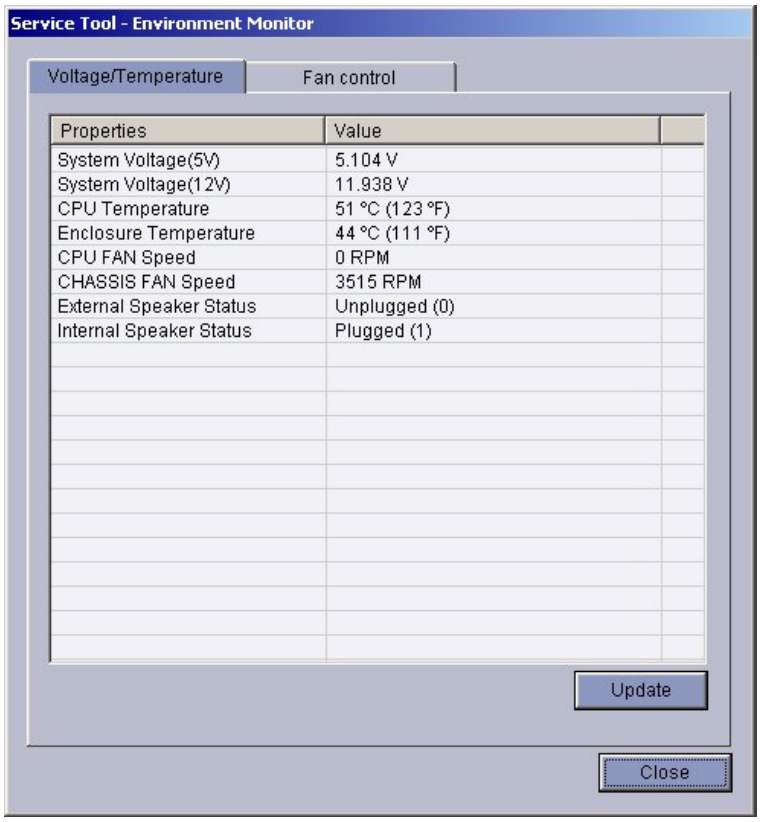
Environment Monitoring

1. Double-click the *Environment Monitoring* icon. The *Service Tool - Environment Monitor* window displays.
2. Click the *Voltage/Temperature* tab. Information about CIC Pro current internal component voltage/temperature displays.

NOTE

Click *Update* to refresh the displayed values.



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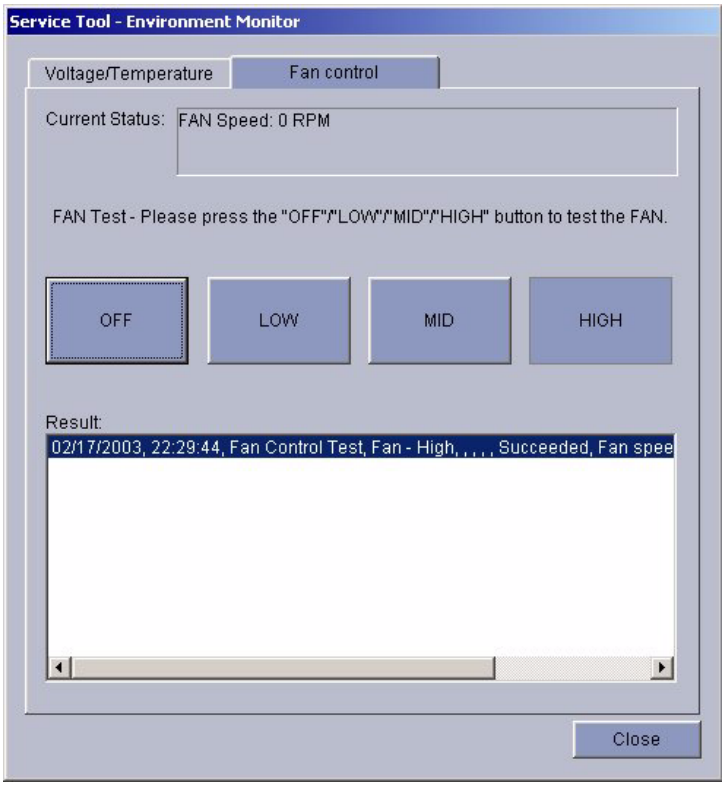
Properties	Value
System Voltage(5V)	Actual real-time voltage of the CIC Pro 5-volt internal power sub-system (acceptable limits: 4850 to 5250 mV)
System Voltage(12V)	Actual real-time voltage of the CIC Pro 12-volt internal power sub-system (acceptable limits: 11400 to 12600 mV)
CPU Temperature	Real-time CIC Pro internal temperature at the CPU (acceptable limits: 5 — 90°C)
Enclosure Temperature	Real-time CIC Pro internal temperature. (acceptable limits: 5 — 70°C)

CPU FAN Speed	Real-time CIC Pro CPU fan speed. (acceptable limits: 2700 — 4000 RPM)
CHASSIS FAN Speed	Real-time CIC Pro chassis fan speed. (acceptable limits: 1700 — 4000 RPM)
External Speaker Status	*Plugged (1)* indicates connector plugged into the external speaker socket; *Unplugged (0)* indicates nothing plugged into the external speaker socket.
Internal Speaker Status	*Plugged (1)* indicates connector plugged into the internal speaker socket; *Unplugged (0)* indicates nothing plugged into the internal speaker socket.

3. Click the *Fan Control* tab.



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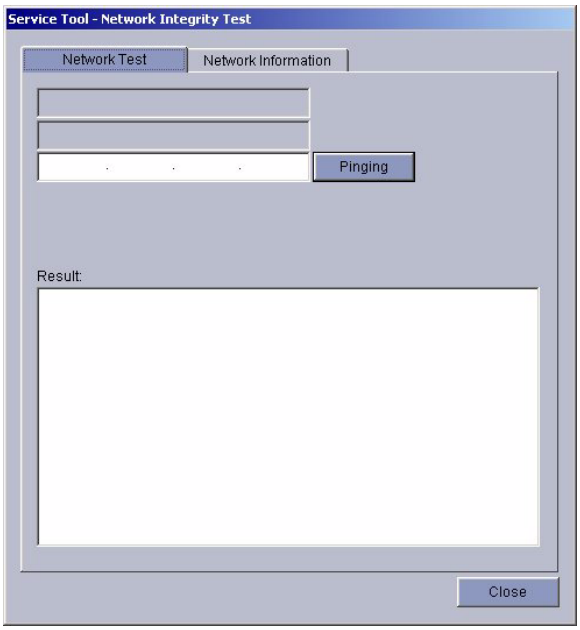
4. Click the *OFF* button. The results of the fan control test display in the Result field.
5. Repeat the previous step for the *LOW*, *MID* and *HIGH* buttons.
6. When finished, click *Close* to close the *Service Tool - Environment Monitor* window.

Network Integrity Test

1. Double-click the *Network Integrity Test* icon. The *Service Tool - Network Integrity Test* window displays.
2. Click the *Network Test* tab.



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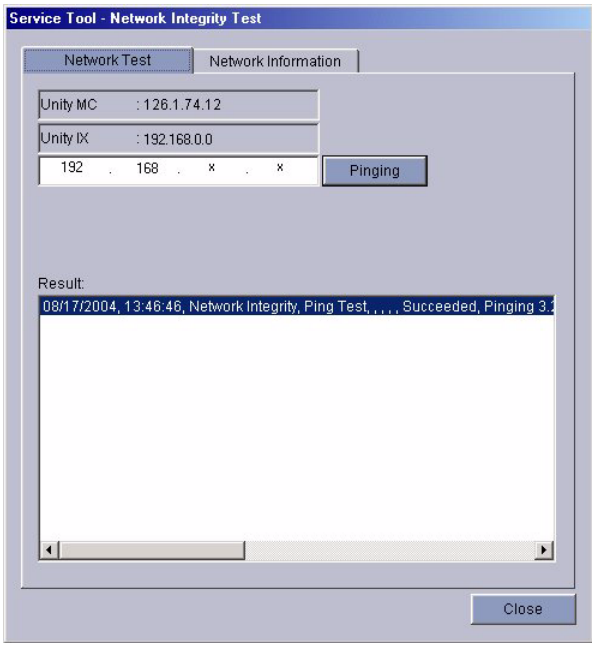
3. Enter the IP address of a known device on the network into the field to the left of the *Pinging* button.
4. Click *Pinging*. The results of the ping display in the *Result* field.


Service Tool - Network Integrity Test
Network Test
Network Information
Unity MC : 126.1.74.12
Unity IX : 192.168.0.0
192 . 168 . x . x
Pinging
Result:
08/17/2004, 13:46:46, Network Integrity, Ping Test, , , , , Succeeded, Pinging 3.
Close

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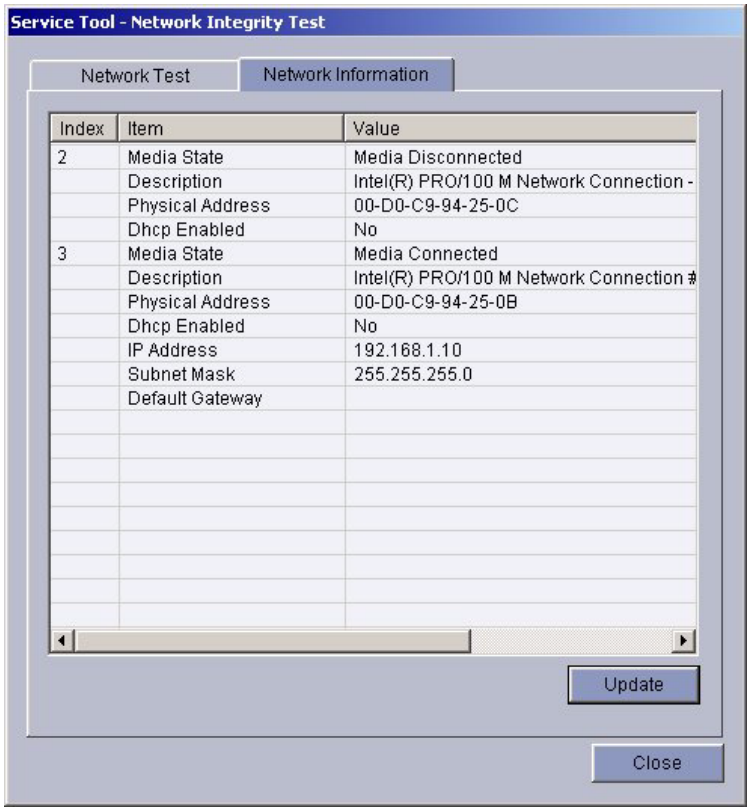
5. Click the *Network Information* tab. Information about the CIC Pro network connection devices displays.

NOTE

Click *Update* to refresh the displayed values.



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6. When finished, click *Close* to close the *Service Tool - Network Integrity Test* window.

Printing Test

1. Double-click the *Printing Test* icon. The *Service Tool - Printing Test* window displays.
2. Click the *Printing Test* tab.
3. Click the *DDW Test* or *Laser Printer Test* button.
4. If *DDW Test* was clicked, click the *Start - Test Pattern* button.
5. If laser *Laser Printer Test* was clicked:
   a. Select the laser printer from the pull down menu. Click *Printing*.

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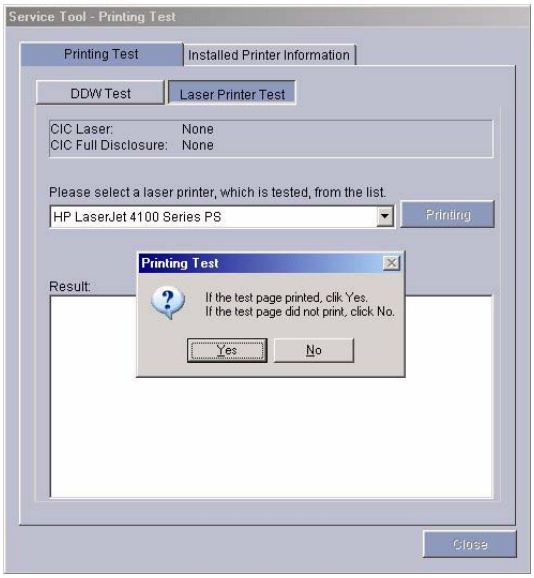
   b. A test page is printed. Click Yes in the pop-up window when the test page prints.

143A

6. Click the *Installed Printer Information* tab. Information about installed printers displays.



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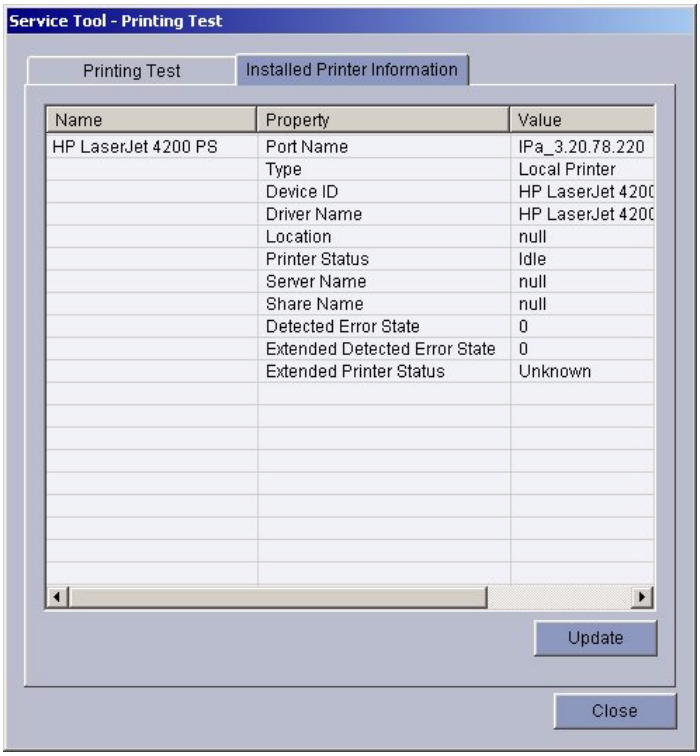
NOTE

Click *Update* to refresh the displayed values.

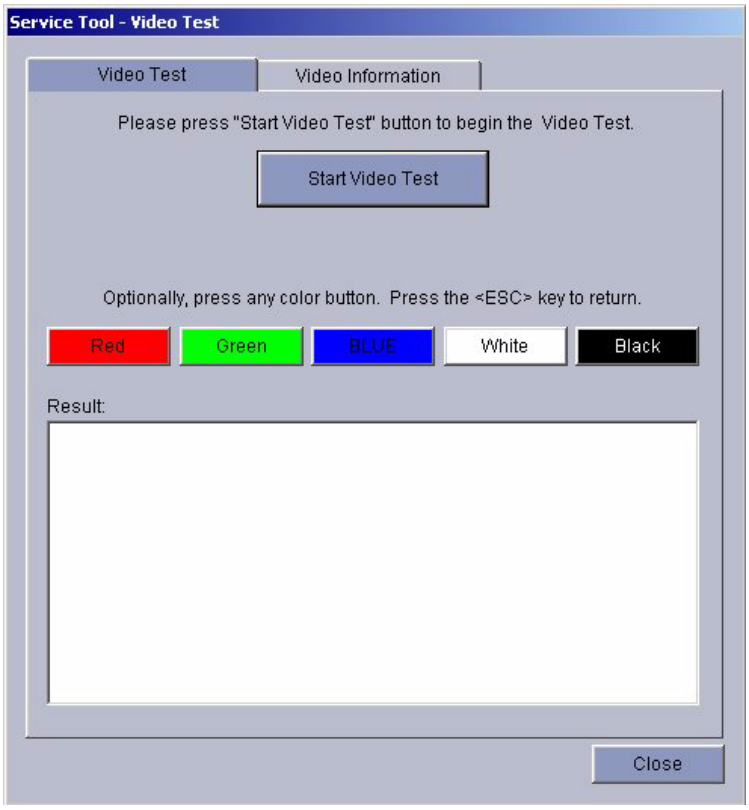


117A

7. When finished, click *Close* to close the *Service Tool - Printing Test* window.

Video Test

1. Double-click the *Video Test* icon. The *Service Tool - Video Test* window displays.
2. Click the *Video Test* tab.



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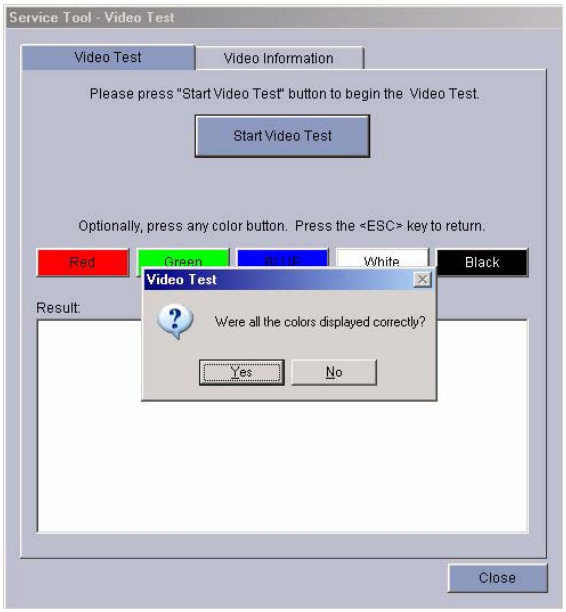
3. To run a “one-step” video test, click the *Start Video Test* button. The monitor will cycle through and display all five RGB color modes. The results of the test display in the *Result* field.

4. To test individual RGB color modes, click the button corresponding to the color mode you want to test. The associated color displays, and the results of the test display in the *Result* field. Click *Yes* when the colors display correctly.



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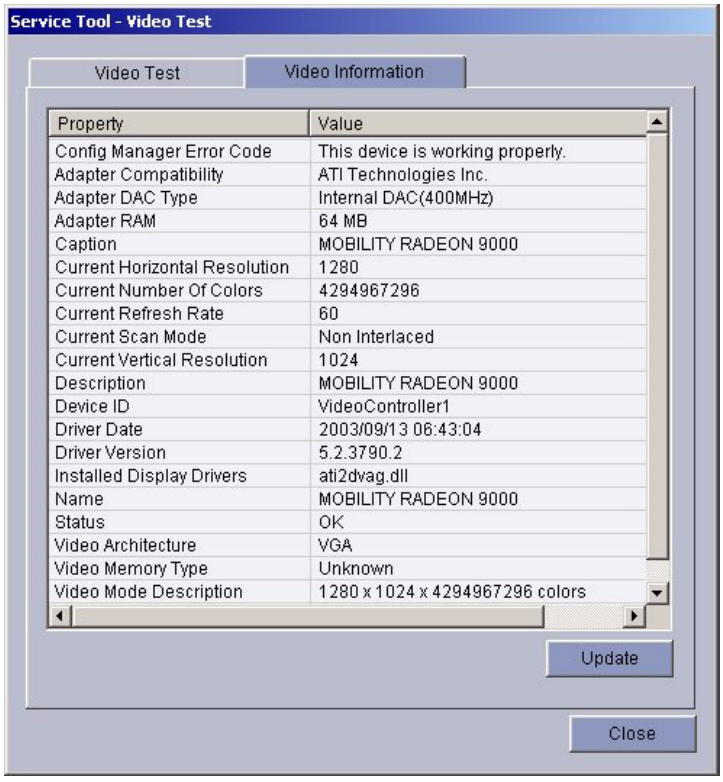
5. Click the *Video Information* tab. Information about the CIC Pro video displays. Information on this tab is used for video troubleshooting.

NOTE

Click *Update* to refresh the displayed values.



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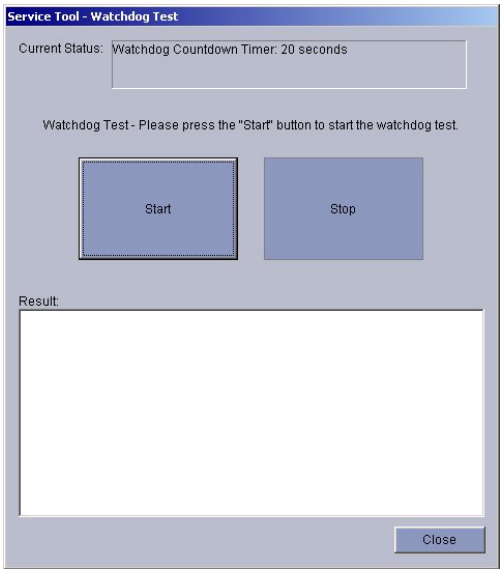
6. When finished, click *Close* to close the *Service Tool - Video Test* window.

Watchdog Test

NOTE

This procedure will cause the CIC Pro to reboot.

1. Double-click the *Watchdog Test* icon. The *Service Tool - Watchdog Test* window displays.
2. Click the *Start* button. The watchdog test counts down until the *Stop* button is clicked. The CIC Pro reboots when the count down is completed.



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3. When finished, click *Close* to close the *Service Tool - Watchdog Test* window.

E Electromagnetic Compatibility

For your notes

Electromagnetic Compatibility (EMC)

Changes or modifications to this system not expressly approved by GE Medical Systems can cause EMC issues with this or other equipment. This system is designed and tested to comply with applicable regulation regarding EMC and must be installed and put into service according to the EMC information stated in this appendix.

WARNING
Use of portable phones or other radio frequency (RF) emitting equipment near the system may cause unexpected or adverse operation.

WARNING
The equipment or system should not be used adjacent to, or stacked with, other equipment. If adjacent or stacked use is necessary, the equipment or system should be tested to verify normal operation in the configuration in which it is being used.

Guidance and Manufacturer's Declaration – Electromagnetic Emissions

The CIC Pro is intended for use in the electromagnetic environment specified below. It is the responsibility of the customer or user to assure that the CIC Pro is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment – Guidance
RF Emissions EN 55011	Group 1	The equipment uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions EN 55011	Class A	The equipment is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions EN 61000-3-2	Class A	
Voltage Fluctuations/ Flicker Emissions EN 61000-3-3	Complies	

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The CIC Pro is intended for use in the electromagnetic environment specified below. It is the responsibility of the customer or user to assure that the CIC Pro is used in such an environment.

Immunity Test	EN 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Electrostatic Discharge (ESD) EN 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical Fast Transient/Burst EN 61000-4-4	± 2 kV for power supply lines ±1 kV for input/output lines	± 2 kV for power supply lines ±1 kV for input/output lines	Mains power should be that of a typical commercial or hospital environment.
Surge EN 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	Mains power should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines EN 61000-4-11	<5% U_t (>95% dip in U_t) for 0.5 cycles <40% U_t (>60% dip in U_t) for 5 cycles <70% U_t (>30% dip in U_t) for 25 cycles <5% U_t (>95% dip in U_t) for 5 s	<5% U_t (>95% dip in U_t) for 0.5 cycles <40% U_t (>60% dip in U_t) for 5 cycles <70% U_t (>30% dip in U_t) for 25 cycles <5% U_t (>95% dip in U_t) for 5 s	Mains power should be that of a typical commercial or hospital environment. If the user of the equipment requires continued operation during power mains interruptions, it is recommended that the equipment be powered from an uninterruptable power supply or a battery.
Power Frequency (50/60 Hz) Magnetic Field EN 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE:

U_t is the AC mains voltage prior to application of the test level.

Guidance and Manufacturer's Declaration – Electromagnetic Immunity

The CIC Pro is intended for use in the electromagnetic environment specified below. It is the responsibility of the customer or user to assure that the CIC Pro is used in such an environment.

Immunity Test	EN 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
			Portable and mobile RF communications equipment should not be used closer to any part of the equipment, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Conducted RF EN 61000-4-6	3 Vrms 150 KHz to 80 MHz	3 V rms	$d = 1.2\sqrt{P}$
Radiated RF EN 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer, and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level in each frequency range[b]. Interference may occur in the vicinity of equipment marked with the following symbol:

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by reflection from structures, objects, and people.

[a]Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the equipment is used exceeds the applicable RF compliance level above, the equipment should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the equipment.

[b]Over the frequency range 150 KHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended Separation Distances

The table below provides the recommended separation distances (in meters) between portable and mobile RF communications equipment and the CIC Pro.

The CIC Pro is intended for use in the electromagnetic environment on which radiated RF disturbances are controlled. The customer or the user of the CIC Pro can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CIC Pro as recommended below, according to the maximum output power of the communications equipment.

	Separation Distance in Meters (m) According to Frequency of Transmitter		
Rated Maximum Output Power of Transmitter in Watts	**150 kHz to 80 MHz [a]** $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz [a]** $d = 1.2\sqrt{P}$	**800 MHz to 2.5 GHz [a]** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23
[a]At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.			

For transmitters rated at a maximum output power not listed above, the recommended separation distance [*d*] in meters (m) can be estimated using the equitation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE:

These guidelines may not apply in all instances. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Compliant Cables and Accessories

WARNING
The use of accessories, transducers and cables other than those specified may result in increased emissions or decreased immunity performance of the equipment or system.

The table below lists cables, transducers, and other applicable accessories with which GE Medical Systems claims EMC compliance.

NOTE: Any supplied accessories that do not affect EMC compliance are not included.

Part No	Description	Maximum Lengths
201792-001	DVI-D to DVI-D Cable	1.8 m / 6 ft
418335-00x	RJ45 Category 5 Cable	N/A
2016193-001	USB Keyboard	N/A
TBA	USB Mouse	N/A
2019795-001	USB Cable	1.8 m / 6 ft
2006733-001	Serial Cable	1.8 m / 6 ft
2001323-001	Speakers	N/A
80274-006	AC Power Cord	1.8 m / 6 ft
2020737-001	NEC Display 20” LCD 20080UX+	N/A
418331-002	PRN50 printer	N/A
418708-001	Key Pad	N/A

For your notes

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